7100
A572
Hort.

Vol. VI JANUARY, 1909 No. 1

AMERICAN HOMES AND GARDENS

$3.00 A YEAR

MUNN & COMPANY, Publishers

PRICE, 25 CENTS

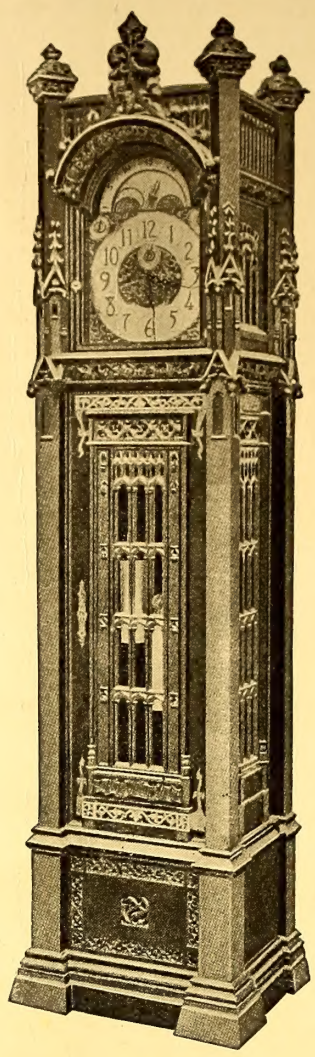
Charles Dana Gibson

HAS returned to America to draw more of his inimitable pictures of people. He will also paint in oil colors subjects as typically American as his well-known pen-and-ink drawings.

¶ With renewed enthusiasm, and with new powers after three years of study among the masters in Spain, Italy, Holland, France, Germany, and England, Mr. Gibson takes up his work, which will prove even more interesting to lovers of pictures than it was before. His paintings will be faithfully reproduced in full color, and his drawings in black and white, appearing exclusively in one publication—

Collier's

The National Weekly



HALL CLOCKS

The most useful and ornamental article you can have in your home is a fine HALL CLOCK. We make many styles and kinds, with or without chimes.

The "Banjo," which is so popular for dining-room and library, is a most satisfactory clock.

We also make a full line of Marble Clocks and Regulators.

If your local dealer does not sell our line, send direct for new illustrated catalogue.

Waltham Clock Company
Waltham, Mass.

¶ Americans are now building more beautiful houses and are decorating and furnishing them with greater care and in better taste than ever before.

¶ The most potent single influence working for higher standards in architecture and decoration is

The Architectural Record

¶ If you are interested in building a building of any sort, you will be interested in The Architectural Record.

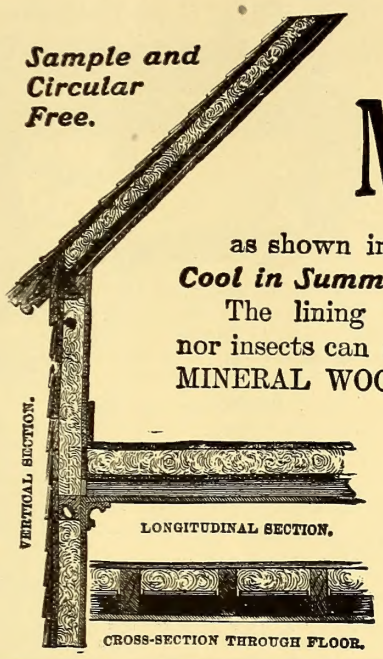
Send for a Sample Copy—Free.

THE ARCHITECTURAL RECORD COMPANY

11 to 15 East 24th Street, NEW YORK 511 Monadnock Building, CHICAGO

SMITHSONIAN
AUG 12 1985
LIBRARIES

Sample and Circular Free.



A House Lined with

Mineral Wool

as shown in these sections, is ***Warm in Winter, Cool in Summer,*** and is thoroughly DEAFENED.

The lining is vermin-proof; neither rats, mice, nor insects can make their way through or live in it. MINERAL WOOL checks the spread of fire and keeps out dampness.

Correspondence Solicited.

U. S. Mineral Wool Co.

140 Cedar St., NEW YORK CITY.

The Enos Company

MAKERS OF LIGHTING FIXTURES

5 West 39th Street, New York City

Baltimore, 519 N. Charles Street
San Francisco, 1748 California Street
Toronto, 94 King Street, West
Pittsburg, G. P. Norton, Penn at 4th St.
Spokane, Washington, Cutter & Plummer
Seattle, Washington, Cox & Gleason Company, 1914 Second Avenue
Chicago, W. K. Cowan & Co., 203 Michigan Blvd.
St. Louis, Mo., N. O. Nelson Mfg. Co.

NEW ENGLAND REPRESENTATIVES
BIGELOW, KENNARD & CO., BOSTON

Kitchen Showing Interlocking Rubber Tiling in Residence of Mr. Webb Horton, Middleton, N. Y.

INTERLOCKING RUBBER TILING

An Ideal Floor Covering for Court Houses, Banking Institutions, Churches, Hospitals, Libraries, Business Offices, Restaurants, Vestibules, Elevators, Kitchens, Laundries, Pantries, Bathrooms, Steamships and Floating Property generally.

We are the original manufacturers of Interlocking Rubber Tiling

NEW YORK BELTING & PACKING CO., Ltd.

91-93 Chambers Street, NEW YORK CITY

CHICAGO, ILL.: 150 Lake Street
ST. LOUIS, MO.: 218-220 Chestnut Street
PHILADELPHIA, PA.: 118-120 N. Eighth Street
SAN FRANCISCO, CAL.: E. 11th St. & 3d Ave., Oakland
BOSTON: 232 Summer Street
BALTIMORE, MD.: 114 W. Baltimore Street
BUFFALO, N. Y.: 600 Prudential Building
PITTSBURGH, PA.: 913-915 Liberty Avenue
SPOKANE, WASH.: 163 S. Lincoln Street

Sliding Doors

That Never Bind

If you are going to build a house, or remodel your present one, put in sliding doors wherever you conveniently can. Instead of jamming or sticking in the ways, they will slide easily and freely when hung on the

ALLITH

"Reliable" Parlor Door Hangers

These prevent the sliding doors from jamming, make the slide noiseless and are not affected by the sagging or warping of walls, floors or doors. They cannot jump the track or get out of order, and they can be adjusted without removing strips or stops. They are absolutely

Noiseless, Never Bind, Stick or Jump the Track

or get out of order. Every Allith Hanger is guaranteed to give complete satisfaction.

They are exceedingly popular with architects and house-builders. Every Allith Hanger is guaranteed to give satisfaction. Send us your name and address with the name of your architect, for our latest complete catalogue with prices, etc.

Allith Manufacturing Company
2115 West Taylor Street Chicago, Illinois

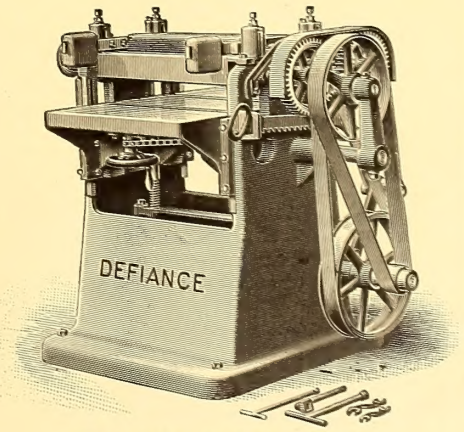
"DEFIANCE"

Wood-Working Machinery

For Pattern Shops and General Wood-Work

Invented & Built by

THE DEFIANCE MACHINE WORKS
DEFIANCE, OHIO



24-Inch Single Surface Planer

BURLINGTON Venetian and Sliding BLINDS

Venetian Blind for inside window and outdoor veranda. Any wood; any finish to match trim.

SCREENS AND SCREEN DOORS

¶ Equal 500 miles northward. Perfect privacy with doors and windows open. Darkness and breezes in sleeping rooms.

Sliding Blinds for inside use. Require no pockets. Any wood; any finish.

WRITE FOR OUR CATALOGUE, PRICE-LIST AND PROPOSITION TO YOU

BURLINGTON VENETIAN BLIND CO., 975 Lake St., Burlington, Vermont

MISTAKES AVOIDED

In Buying Good Furniture

By following the helpful suggestions found in our instructive booklet, "Furniture of Character." No advertisement can adequately tell the wondrous story of the remarkable

Berkey & Gay

reproductions of Period and Colonial furniture for the bed room, dining room and library. This furniture charms by its solidity grace and beauty, because it is artistically designed durably constructed and elegantly finished. The booklet will be sent for 16 cents in U S stamps to partly cover its cost. If not satisfactory return it and stamps will be refunded.

Our integrity of fifty years standing and our guarantee shopmark is your safeguard in buying this furniture from the dealers.

BERKEY & GAY FURNITURE

Shop Mark

BERKEY & GAY FURNITURE CO., Estab. 1859
Please Address Dept. M **Grand Rapids, Mich.**

IF YOU WISH TO SUBSCRIBE to only One Magazine, careful investigation will show you that the METROPOLITAN MAGAZINE

should be that one; so thoroughly American is it, so vital and so varied. If, however, you require several, we, as agents, are able to secure for you, as one of our patrons, what you wish, together with the METROPOLITAN, at wonderfully low rates. We venture to call to your attention a few of these combinations.

CLASS "A"	Reg. Price Per Year
American Magazine	$1.00
Children's Magazine	1.00
Cosmopolitan Magazine	1.00
Garden Magazine	1.00
Good Health	1.00
Uncle Remus's Home Magazine	1.00
National Food Magazine	1.00
*Woman's Home Companion	1.25

CLASS "B"	Reg. Price Per Year
Army and Navy Life	$1.50
House and Garden	3.00
Independent	2.00
Outing	3.00
Short Stories	1.50

CLASS "IV"	Reg. Price Per Year
Pacific Monthly	$1.50
Photo-Era	1.50
Travel	1.50
Technical World	1.50
World To-day	1.50

The METROPOLITAN and any one magazine in Class "A" for	$1.65
The METROPOLITAN and any two magazines in Class "A" for	$2.30
The METROPOLITAN and any three magazines in Class "A" for	$2.95
The METROPOLITAN and any one magazine in Class "A" and any one in Class "B" for	$3.00
The METROPOLITAN and one Class "A" and one Class "IV" for	$2.65
The METROPOLITAN and any one in Class "B" for	$2.35
The METROPOLITAN and any two in Class "B" for	$3.70
The METROPOLITAN and any one in Class "IV" for	$2.00

SPECIAL! METROPOLITAN, WORLD'S WORK AND DELINEATOR, $3.00

THE METROPOLITAN with

American Education	$2.00
The Housekeeper and the Reliable Poultry Journal	1.70
Lippincott's Magazine	2.75

SPECIAL! METROPOLITAN, WOMAN'S HOME COMPANION, McCLURE'S, $2.50

Any of the Publications in this list may be added at the price quoted.

CENTURY	$3.85
HARPER'S MONTHLY	3.50
LITERARY DIGEST	3.00
LADIES' HOME JOURNAL	1.50
MUNSEY'S	1.00
SCRIBNER'S	3.00
SATURDAY EVENING POST	1.50
YOUTH'S COMPANION	1.75

THE METROPOLITAN, EVERYBODY'S, THE DELINEATOR ... $2.50

THE METROPOLITAN, WORLD'S WORK, EVERYBODY'S ... $3.25

*Twenty-five cents must be added to all clubs containing Woman's Home Companion if ordered after February 1st, 1909

On account of our special arrangement with the publishers of the various magazines, we are in a position to quote prices to you far below those which would ordinarily be given to you, so if you do not find in the above clubbing offers the combination which you desire, write to us exactly what you wish and we will quote you the lowest possible price for such a combination.

METROPOLITAN MAGAZINE AGENCY

Dept. A, 7 WEST 29th STREET, NEW YORK CITY

THIS OFFER CANCELS AND TAKES PRECEDENCE OVER ALL PREVIOUS OFFERS MADE BY US

5 Grapevines $1.00

Strong, Hardy, Three-year-old Vines

Any five of the following well-known varieties:
(Red)—**Brighton, Delaware, Lindley.**
(White)—**Niagara, Diamond, Pocklington.**
(Black)—**Concord, Worden, Moore's Early, Wilder.**

These vines will grow anywhere and will bear the year after planting. We guarantee them to be as represented or money refunded. We also offer 10 strong, hardy, two-year-old vines for $1.00. This is a remarkable collection of grapevines at an exceedingly low price. Order now, vines will be shipped proper time to plant.

With every order we send our valuable book how to plant, cultivate and prune. Grapes are easily grown and should be in every garden.

T. S. HUBBARD COMPANY
Grape Vine Specialists **FREDONIA, N. Y.**
Established 42 Years

Van Dorn Iron Works Co.

PRISON, HOUSE & STABLE WORK

JOIST HANGERS
LAWN FURNITURE
FENCING, ETC.

CLEVELAND, OHIO

Gregory's Seed Book

Sent FREE to Anyone

Let us help you make your planting a success by sending you our new catalogue. It contains our seed experiences of over fifty years, gives expert advice on the raising of various vegetables and describes the best of the old and new varieties

This book is worth dollars to you, as it has been the means of turning many a failure into success. Write to-day for a free copy.

We sell all kinds of flower and vegetable seed, from five cents' worth up to the outfit for a farm.

J. J. H. GREGORY & SON, MARBLEHEAD, MASS.

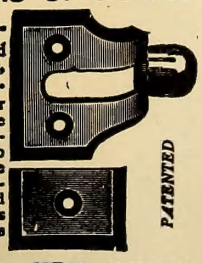
GREGORY'S SEED CATALOGUE FOR 1909

SPECIAL OFFER to Carpenters

BUILDERS AND OWNERS OF HOMES

IVES PATENT WINDOW VENTILATING LOCK. A Safeguard for Ventilating Rooms. Pure Air, Good Health and Rest Assured.

To introduce this article, Four Ventilating Locks in Genuine Bronze, Brass or Antique Copper Finish will be mailed to any address prepaid for One Dollar. Will include a forty-page Hardware Catalogue and Working Model to carpenters who wish the agency to canvass for its sale. Address



PATENTED

The H. B. Ives Co. NEW HAVEN, Conn., U. S. A.

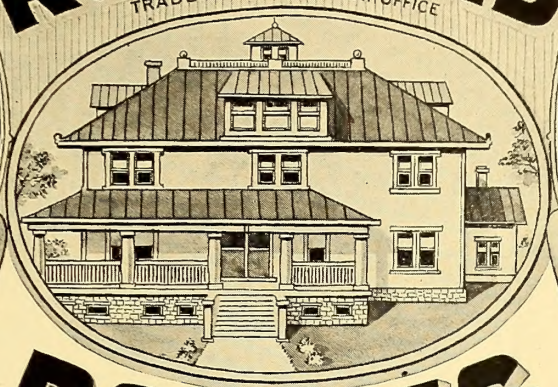
"To have your roof last — Use Ruberoid Roofing First."

RUBEROID

TRADE MARK REG. U.S. PAT. OFFICE

The only permanent Roofing with permanent colors

Made in Red, Brown, Green and Slate color



THE STANDARD

THE STANDARD

ROOFING

has none of the defects common to other roofing materials, as the following comparison shows:

Metal Roofs rust and leak unless frequently painted. A metal roofed house is always hot in summer.

RUBEROID never rusts, needs no painting when laid and insures a cool interior.

Shingles warp, split and rot, are very expensive and require frequent repair.

RUBEROID does not warp, split or rot, is less expensive than metal or shingles and lasts longer.

Tar and Low-Priced Roofings, even when covered with sand or gravel, are quickly affected by changes of temperature. They melt and run under summer heat, leaving their felt or paper base unprotected. They are also more or less inflammable.

RUBEROID is not affected by changes of temperature and never melts or runs under the hottest sun. It is weather-proof, water-proof and so highly fire resistant that sparks or burning brands will not ignite it.

RUBEROID has an unequalled record of over 16 years' satisfactory service and is proven the most economical roofing made. Any handy man can lay it. No skilled labor required.

For further particulars write for Booklet No. 15

THE STANDARD PAINT COMPANY

Manufacturers of Ruberoid Roofing, Building and Sheathing Papers, etc.

100 William St., New York

Chicago, St. Louis, Kansas City, Boston, Philadelphia, New Orleans

THE STANDARD PAINT CO. OF CANADA, LTD., Imperial Bank Bldg., Montreal
THE RUBEROID CO., LTD., 81-83 Knightrider St., London, England
CIE. FRANCAISE DU RUBEROID, 83 Boulevard Richard Lenoir, Paris, France

A breakfast preceded by a luscious Atwood Grape Fruit is the most healthful beginning to the day.

ATWOOD GRAPE FRUIT

No grape fruit grown anywhere in the world is quite so appealing in its exquisitely delicious flavor as the highly cultivated product of the ATWOOD Grove in Florida. ATWOOD Grape Fruit is the ideal fruit for breakfast use. It is the solid, juice-laden kind, moderately tart, always refreshing and satisfying.

The ATWOOD Grove at Manavista, Fla., is the most extensive in the world. 250 acres are devoted exclusively to the scientific cultivation of the perfect Grape Fruit. A quarter million dollars expenditure has resulted in the production of ATWOOD Grape Fruit, the finest product of its kind ever grown.

To serve, cut in cross sections, remove the core, and serve with or without sugar. Grape Fruit is better when served without ice. ATWOOD Grape Fruit makes the most delicious salads.

Taken at night on retiring it is better than drugs. Buy it by the box, it will keep for weeks.

The ATWOOD trade-mark on the wrapper is a certificate of the perfect product. Look for it when you purchase.

The Atwood Company Manavista Fla TRADE MARK

THE ATWOOD COMPANY
KIMBALL C. ATWOOD, Pres. and Treas.
290 BROADWAY
NEW YORK

Water, free as Air

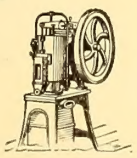
Water is valuable largely in proportion to the pressure at which it can be delivered. To illustrate: water delivered into your home, with no pressure, would not flow from the faucet; it would be necessary to draw it with a suction pump and to carry it from room to room in pails; of course, water with no pressure is better than none at all; again, at slight pressure water flows slowly from the faucet. This means waiting some time for any quantity, and naturally under such conditions, the user always puts up with a scant supply; bathing is a discouraging proposition, when water merely trickles into the tub. But the moment you get water at high pressure, you have it in abundance, and it at once serves a dozen purposes for which it would never otherwise be used, and it is then used freely by every member of the family. There is no long wait, or the fixing of certain days, when each member may bathe, because its abundance makes it as free as air. Think of it, *water as free as air!* That means Comfort, Cleanliness and Health. Then, oh, what a protection water under pressure is in case of fire! Have you got it? If not, don't you want it? *It goes with every Hot-Air Pump.*

Be sure that the name REECO-RIDER or REECO-ERICSSON appears upon the pump you purchase. This name protects you against worthless imitations. When so situated that you cannot personally inspect the pump before ordering, write to our nearest office (see list below) for the name of a reputable dealer in your locality, who will sell you only the genuine pump. Over 40,000 are in use throughout the world to-day.

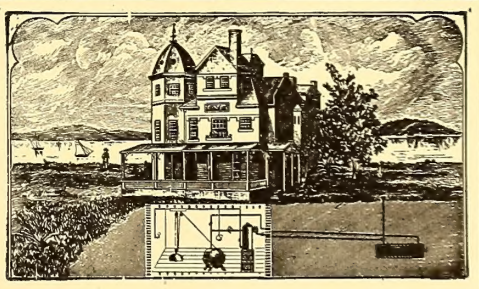
Write for Catalogue ***E****, and ask for reduced price-list.*

RIDER-ERICSSON ENGINE CO.

35 Warren Street, New York
239 Franklin Street, Boston
40 Dearborn Street, Chicago
40 North 7th Street, Philadelphia
234 Craig Street West, Montreal, P. Q.
22 Pitt Street, Sydney, N. S. W.



Hot-Air Pump



THE **most modern, and best illuminating and cooking** service for isolated homes and institutions, is furnished by the **CLIMAX GAS MACHINE.**

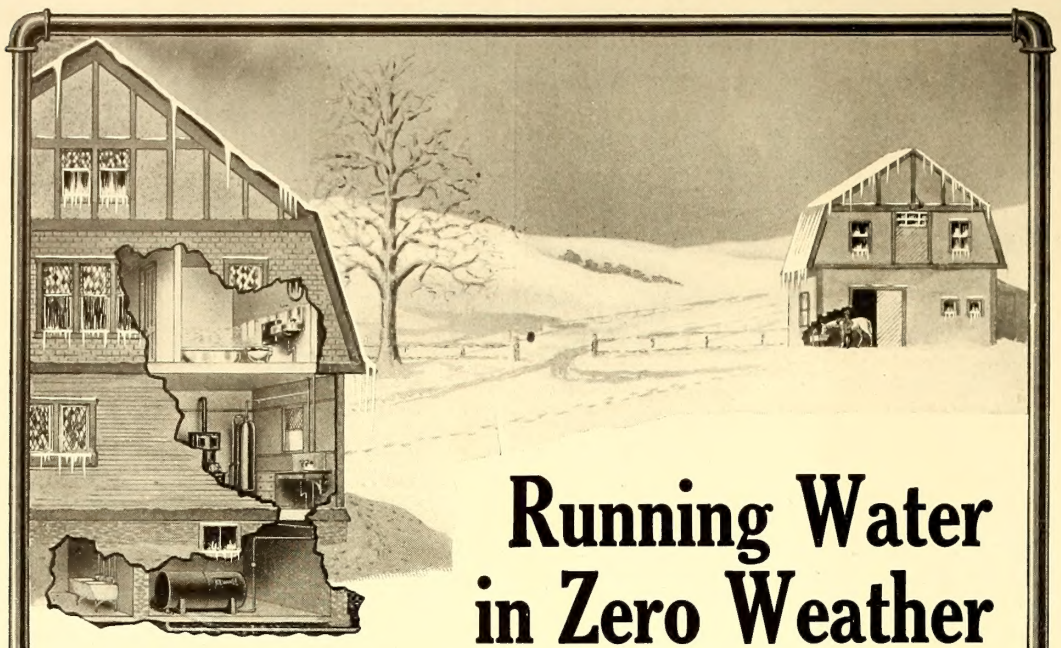
Apparatus furnished on **TRIAL** under a **guarantee to be satisfactory** and in advance of all other methods.

Cooks, heats water for bath and culinary purposes, heats individual rooms between seasons—drives pumping or power engine in most efficient and economical manner — also makes brilliant illumination. **IF MACHINE DOES NOT MEET YOUR EXPECTATIONS, FIRE IT BACK.**

Send for Catalogue and Proposition.

Low Price **Better than City Gas or Electricity and at Less Cost.**
Liberal Terms

C. M. KEMP MFG. CO.
405 to 413 E. Oliver Street, Baltimore, Md.



Running Water in Zero Weather

THERE is no longer any necessity for inconvenience and repairs due to frozen tanks and pipes. No matter how cold it may be, you can have a constant supply of fresh running water delivered at a usable temperature to all fixtures. This satisfactory water supply service will be yours, if you install the

Kewanee System of Water Supply

With the Kewanee System, there is no elevated tank exposed to all extremes in weather conditions. No freeze-ups in winter and no warm stagnant water in summer. Instead, a **Kewanee Pneumatic Tank** is located in the **cellar,** or buried in the **ground.** It cannot leak, freeze, overflow or collapse.

Pump the water from your well, cistern or other source, into this tank; and it will be delivered to the fixtures and hydrants under **air pressure.** Water will always be on tap at the plumbing fixtures. Horses and stock can be watered **in** the barn. First-class fire protection assured for your buildings.

Over 9000 Kewanee Systems in operation, supplying water for country and suburban homes, farms, schools, public and private institutions, etc. Every Kewanee System a success and every user a friend.

The Kewanee System is the **original** water supply system, involving the use of **air pressure** instead of gravity pressure. There are imitations now—avoid them. Get the genuine and you will take no chances—we guarantee that. Look for our trade-mark KEWANEE and name plates on tank and pumping machinery.

No charge for expert engineering service. Let us help you solve your water supply problem. Write for our 64-page illustrated catalog No. **36.** It is free.

Kewanee Water Supply Company, Kewanee, Illinois.

1566 Hudson-Terminal Bldg. 50 Church St. New York City, N. Y.
1212 Marquette Bldg. Chicago, Ill.
710 Diamond Bank Bldg. Pittsburg, Pa.

Accurate information regarding THE WORLD'S INDUSTRIAL PROGRESS is a necessity of MODERN BUSINESS LIFE, as well as a subject of ABSORBING INTEREST for every thinking man and woman.

For nearly sixty-five years the

Scientific American

has been the most widely quoted authority on all matters relating to the progress made in the fields of discovery, invention and scientific news.

Free from dry technicalities, it tells the story of the WORLD'S PROGRESS in a fascinating and practical manner, which makes its weekly visits welcome to the entire family. It is unique among periodical literature because it contains authoritative information which cannot be obtained from any other source.

Subscription price, $3.00 per year.

The Season's Best Club Combinations

Scientific American or American Homes and Gardens	$3.00	$4.45
Review of Reviews	3.00	
	$6.00	
Scientific American or American Homes and Gardens	$3.00	$6.80
Review of Reviews	3.00	
World's Work	3.00	
Everybody's Magazine	1.50	
	$10.50	
Scientific American or American Homes and Gardens	$3.00	$5.35
Everybody's Magazine	1.50	
World's Work	3.00	
	$7.50	
Scientific American or American Homes and Gardens	$3.00	$5.35
McClure's Magazine	1.50	
Review of Reviews	3.00	
	$7.50	
Scientific American or American Homes and Gardens	$3.00	$5.10
World's Work	3.00	
Delineator	1.00	
	$7.00	
Scientific American or American Homes and Gardens	$3.00	$4.60
McClure's Magazine	1.50	
Woman's Home Companion	1.25	
	$5.75	

After February 1st, 1909, 25c. must be added to combinations including Woman's Home Companion.

MUNN & CO., 361 Broadway, New York City

ART AND ECONOMY IN HOME DECORATION. By Mabel Tuke Priestman. 1908. (New York: John Lane Co.) 16mo, 222 pages. Price, $1.50.

The readers of American Homes and Gardens need no introduction to Mrs. Priestman, who has been a steady contributor to this magazine. She has produced an admirable volume which is worthy of a large sale. Mrs. Priestman has endeavored in this volume to assist her readers to solve some of the various problems of house furnishing, and to induce the home-maker to think for herself as to what is to be avoided and what to be made use of. It is really a difficult task to furnish a house properly; it requires serious thought and a knowledge of color and harmony, and a certain refinement and simplicity of taste which are not always easy to acquire; and, therefore, it is well worth while to go to a little trouble to learn the best way of doing this. In her twelve years' experience as an interior decorator, the author has come across problems in house furnishing of almost every kind, and this book is the result of her experience. Portions of it have already appeared in various magazines, including AMERICAN HOMES AND GARDENS. The chapter headings are as follows: "Introduction," "Choosing a Color Scheme," "How to Treat Walls Successfully," "Concerning Halls," "A Few Points to Remember When Buying Rugs and Carpets," "Characteristics of Oriental Rugs," "Home-made Rugs," "Furniture," "The Right Use of Ornament on Furniture," "Casement Windows and Their Treatment," "Fireplaces." "What to Use for Portieres and Curtains in Country Houses," "Shelving, Pictures and Bric-a-Brac," "Lamps and Candle Shades," "Needlework in the Hands of the Craftsman," "Finishing Touches," "Ornamenting Fabrics by means of Stenciling and Block Printing," "Arranging Flowers Artistically," "What to Avoid in the Home," "Cottages on Sea or Lake," "Decoration of the Modern Suburban House," "Some Interesting Remarks," "How Some Craft Workers Fitted Up Their Home."

COSMOS COLLECTION. Consisting of duotone and hand-colored reproductions of the most famous paintings from all the schools of the world; architecture; portraits of people of permanent fame, their homes and associated historic scenes; and popular subjects. Each picture graphically described. Editor-in-chief, George Hall Baker, M.A.; art editors, Harry W. Watrous and Will H. Low. Complete in ten volumes. Vol. I. New York: The Cosmo Studio. 1908.

So far as we can discern this undertaking is an effort to put to some practical use the original halftone plates of the Cosmos pictures. which had a brief vogue a few years ago. Any such effort ought to meet with encouragement, for the pictures are fine and well-nigh perfect specimens of photo-engraving. Whether the present collection represents the best use to which the pictures can be put seems to us doubtful. Reproductions of sculpture and painting are thrown together in haphazard fashion. No attempt whatever is made to arrange paintings in schools. Thus we find the very ordinary Plockhorst between Philippe de Champaigne's triple portrait of Cardinal Richelieu

and Perugino's Virgin and Saints in the National Gallery. To be sure, the editors excuse this disorder on the plea of avoiding monotony, and offer a fairly good cross-reference index to the man who desires to study the pictures in a more orderly manner. The comments on the reproductions are superficial, and in most cases inadequate. As a beautiful picture-book and as an example of fine printing, we have never seen anything that surpasses this volume. There are a few mistakes. Thus the "Portrait of a Boy," facing page 52, has the name of the artist spelled wrong. Pintsurrichio would look more natural without the "s."

The two pages devoted to the reproduction of one hundred well daubed-up palettes might have been spared. It is to be hoped that the defects of the present volume will be obviated in subsequent issues.

ROSES; Their History, Development and Cultivation. By the Rev. Joseph H. Pemberton. London and New York: Longmans, Green & Co. Pp. 24+336. Price, $3.00.

This is an eminently practical book on rose culture by an amateur who has devoted many years to the successful cultivation of this beautiful plant, and who has brought long experience and profound enthusiasm to his work. In truth there can be nothing more delightful than to write about roses except to grow them. Both these fascinating tasks have been accomplished by Mr. Pemberton, who is vice-president of the National Rose Society of England. His book is not only one of profound practical experience, but it is written in a charming manner, and its historical section is crowded with interesting facts in the history of roses that many enthusiastic growers have doubtless forgotten.

Mr. Pemberton is concerned with the amateur rose grower, an enthusiastic body of plant lovers who have contributed largely to the success and popularity of their favorite flower. For many years, he notes, roses were grown chiefly for exhibition purposes; but in the last few years there has been a notable change in this respect, and the plant is now grown extensively for the garden and for house decoration. For neither of these capacities does the rose need an apology, for it is a plant that will be grown so long as flowers are delighted in, and few plants offer as many or as varied possibilities as this. Mr. Pemberton treats the whole subject of rose growing, briefly sketching the history of the most notable types, and then discussing the culture of the plant in the broadest way. Much of his book is, therefore, concerned with the strictly utilitarian aspects of his subject; but the interest of the rose lover will not flag in his pleasantly printed pages. It is a book that may be recommended as a very complete and trustworthy handbook.

HISTORIC MANSIONS AND THEIR GARDENS. Edited by Charles Francis Osborne. Introduction by Frank Miles Day. 1908. (Philadelphia: John C. Winston Co.) 4to, pp. 256. Price, $6.00.

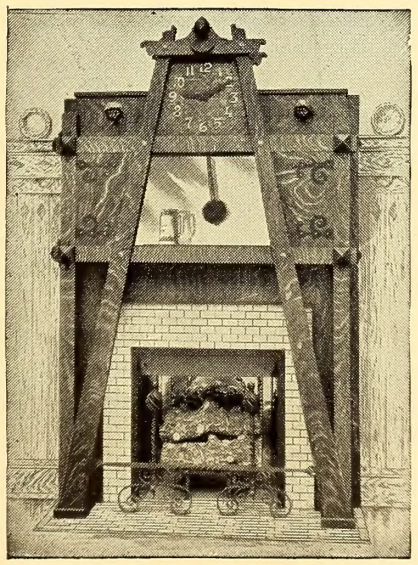
This handsome book describes in a delightful manner Italian gardens, Roman country houses, palaces, castles, country places and gardens of both the old and new worlds. It is profusely illustrated by good halftones made from good originals. It is extremely well printed and is an excellent book for the library table. Almost anyone will find something of great interest in it. For those who love flowers there is the "Iris Garden at Horikiri," while those who are fond of some of the most stirring and eventful episodes in the history of France will have considerable pleasure in reading the description of the Chateau

Trade "Standard" Mark
PORCELAIN ENAMELED
Baths and Lavatories
because of their thorough sanitary efficiency, their snowy beauty, and unusual permanency, first create, then perpetuate home-health, and make your bathroom as attractive and inviting as any room in the house.

Send for Our Book Our new book, "Modern Bathrooms," is beautifully illustrated. It describes in detail a series of up-to-date bathrooms and tells you just how to secure the best possible equipment at the least possible cost. When you buy new bathroom fixtures you'll need this book. Send for it now

Enclose 6 cents postage and give us name of your architect and plumber if selected.

Address, Standard Sanitary Mfg. Co. Dept. 23, Pittsburgh, Pa., U. S. A.
Offices and showrooms in New York: "Standard" Building, 35-37 West 31st Street.
Louisville: 325-329 West Main Street. Pittsburgh: 949 Penn Ave. New Orleans: Cor. Baronne & St. Joseph Sts.
London, Eng.: 22 Holborn Viaduct, E. C. Cleveland: 648-652 Huron Road, S. E.



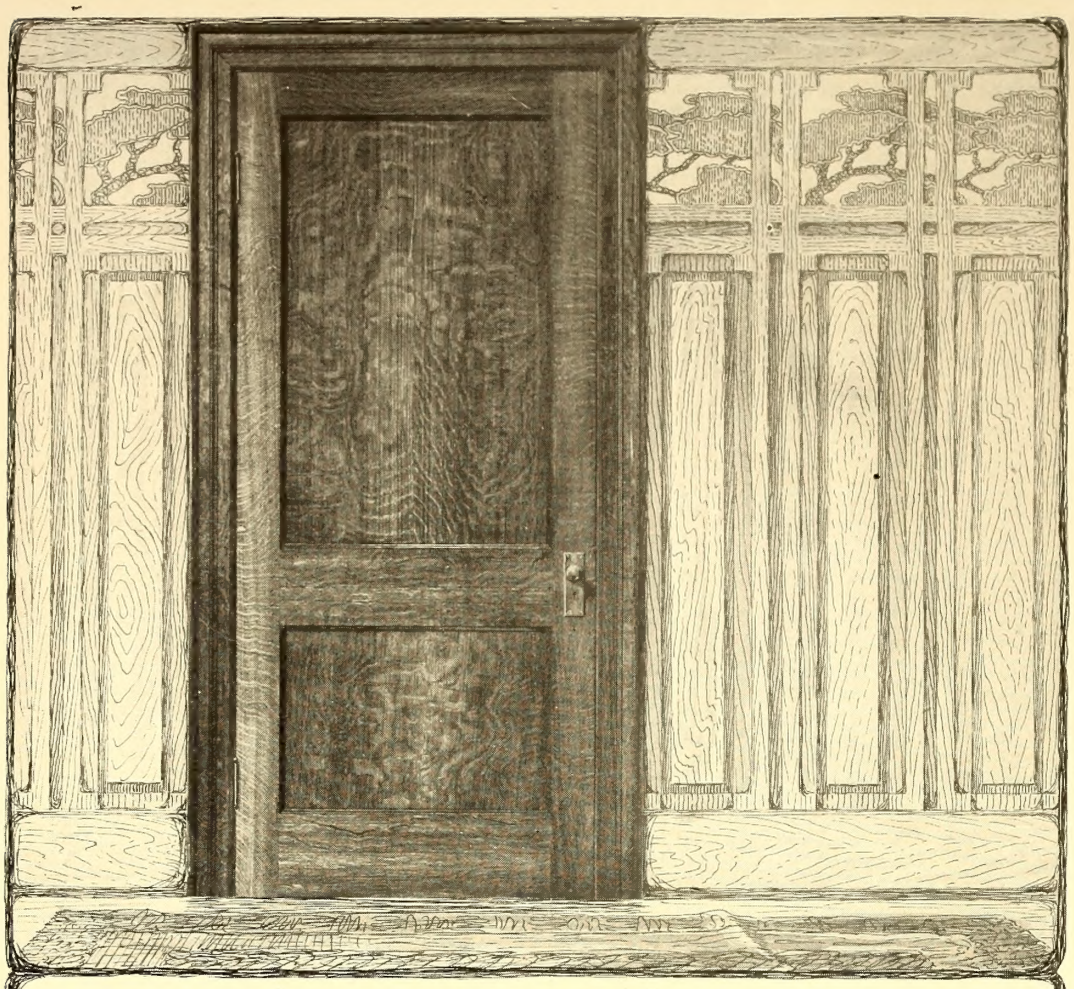
Artistic
Mantels

¶ Our Catalogues contain 130 designs, including Mission, Colonial, White, Mahogany and Oak. Everything, from the very cheapest to the best.

¶ Fireplace Hardware and Tiling of every description.

¶ Catalogue and Special Designs sent on receipt of 25c. in postage.

The Geo. W. Clark Co.
Unity Building, Chicago, Ill.
Clark Building, Jacksonville, Fla.
Factory, Knoxville, Tenn.



Substantial Refinement

Is reflected from every room where **Morgan Doors** are used. Their dignified designs harmonize with interior wood-work, decoration, and furnishings and their solid, honest construction gives the interior a sense of balance and permanence besides increasing the real value of the property.

Morgan Doors

are the most perfect doors manufactured. They are made of several layers with the grain running crosswise making shrinking, warping, or swelling impossible. They are veneered in all varieties of hard-wood, birch, plain or quarter-sawed red or white oak, and brown ash, mahogany, etc., and the delicate grain and coloring of each particular wood is brought out to the highest degree.

Morgan Doors are correctly designed by experts in all styles of architecture—Colonial, Empire, Mission, etc., and each **Morgan Door** is stamped with the name **"Morgan"** as a guarantee of quality, style, durability and satisfaction.

Write today for our handsome illustrated book "The Door Beautiful" which shows you more of the detailed beauty of **Morgan Doors** *and why they are the only doors you should use in your building.*

Morgan Company, Dept. A., Oshkosh, Wisconsin

Distributed by Morgan Sash & Door Co., Chicago, Ill. Morgan Company, Oshkosh, Wis. Morgan Company, Baltimore, Md

The cheapest and most effective fabric
For Draperies, Curtains, Screens, etc.
Send for free samples.
PACIFIC MILLS, BOSTON, MASS.

"You do the designing—we'll make the rug."

Thread & Thrum Rugs

are different from all other rugs, as you can have the color scheme made to harmonize with your requirements. Wool or camel's hair weft, heavy and durable. If your dealer does not sell them, write for color card and price list to
Arnold, Constable & Co., Distributing Agents, New York
The Thread & Thrum Workshop, Auburn, N. Y.

Army Auction Bargains

Tents	$1.90 up	Old Pistols	$.50 up
Shoes	1.25 "	Officers' Swords, new	1.75 "
ARMY SADDLES	3.00 "	Cavalry Sabres	$1.50
" Bridles	1.00 "	UNIFORMS	1.25
" Leggins, pr.	.15 "	7 Shot Carbine	3.50

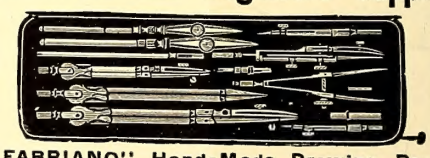
U. S. SPRINGFIELD B-L RIFLES $1.79
With Blank or Ball Cartridge, **35** cents box of **20.**
1907 MILITARY CATALOGUE, 260 large pages, thousands of beautiful illustrations—with 1908 supplement, wholesale and retail prices. Mailed for 15 cents (stamps). **15 ACRES GOVT. AUCTION GOODS**
FRANCIS BANNERMAN, 501 Broadway, NEW YORK

St. Louis, Mo. Baltimore, Md.

F. Weber & Co.

1125 Chestnut St., Philadelphia, Pa.

Architects' and Engineers' Supplies



"FABRIANO" Hand-Made Drawing Papers
Superior to any other hand-made paper
F. Weber & Co.'s Illustration Boards, Air Brushes and Materials

STEEL CEILINGS

For Effectively Decorating All Kinds of Rooms

YOU CAN GET THEM IN

"BERGER'S" Classik METAL CEILINGS

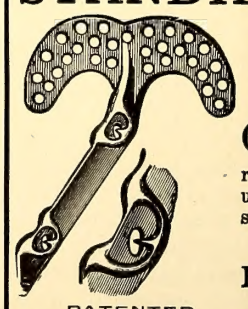
Appropriate Designs for Residences, Business Rooms, Auditoriums, Etc.

¶ Largest and most complete line of artistic STEEL Ceilings in existence. Covers the field so completely you can get just what is required, whether bold or elaborate designs or something comparatively simple.
¶ Before buying a Steel Ceiling of any description, get full details of Berger's "Classik."

ASK FOR CATALOG D-64

The Berger Mfg. Co., Canton, Ohio New York Philadelphia Boston Chicago St. Louis Minneapolis San Francisco Atlanta

STANDING SEAM ROOF IRONS

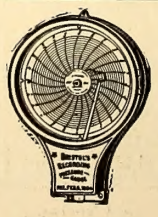


CLINCH right through the standing seam of metal roofs. No rails are needed unless desired. We make a similar one for slate roofs.

Send for Circular

Berger Bros. Co.

PATENTED PHILADELPHIA



BRISTOL'S RECORDING THERMOMETERS

make continuous records of atmospheric temperatures, and are designed for both indoor and outdoor temperatures. Send for new catalogues.

THE BRISTOL COMPANY, WATERBURY, CONN.
NEW YORK *Branches* CHICAGO

de Brissac. An article on "Persian Gardens" is most noteworthy. It is surprising to see views of fountains and pools of water in the gardens of the wealthy in this arid country. America is by no means neglected. Among the notable articles appear "Colonial Homes of Natchez" and "The Gardens and Grounds of Mt. Vernon."

SOCIETY IN THE COUNTRY HOUSE. By T. H. S. Escott. Philadelphia: George W. Jacobs & Co. Pp. 512. Price, $4.00 net.

A book on country houses that contains but a single illustration, and that not of a house at all, is somewhat of a novelty in these days of picture book making. But while Mr. Escott's fascinating volume would have taken on an added interest with pictures of at least some of the more notable houses touched on, it loses nothing in interest in its present shape. It is not, of course, a book on houses, but, as its title sufficiently states, a book on the social life that centers in them. Very interesting indeed are the sketches he draws of this life, both old and present, and momentous are the figures that move across his pages. His book abounds with anecdotes, and is not only agreeable to read, but profitable as well.

America has not yet reached a point at which such a book could be produced concerning our own country life. That is much too new, and, in a sense, much too inconsequential, for the country life to have national social prestige. This it has long since had in England, and it is this aspect of the subject that Mr. Escott is concerned with. The story is an interesting one, and begins as far back as the fourteenth century. The author briefly sketches the conditions under which the country house system became possible. He then passes to the most typical and interesting instances of its complete organization in Tudor times, showing how it then discharged many of the functions fulfilled today by the newspaper, the circulating library, or by more exclusive methods of information, and how, at the same time, it began to occupy a recognized place in the organization of party politics. Then he shows how, from the seventeenth century down to the present hour, in all the great movements of English life, the opportunities of the country house have proved the necessary and eventful supplements to the agencies of parliament and platform. No attempt is made to treat the subject chronologically, except in a very general way, and it is an interesting fact that the author himself has visited almost all the houses he describes or refers to.

It must be obvious, therefore, as is quite well known, that the English country house is a national institution of which we have no counterpart in America. Its life is, therefore, not only peculiarly British, but peculiarly national. A book dealing with so broad a subject could not fail to have great interest, and Mr. Escott's skill as a writer, the many famous men and women with whom he has come personally in contact, and his vast fund of reminiscence have combined to render this book one of exceptional interest and value. The book is not well paragraphed, and a few of the references to persons and events may not always be clear to the American reader, but it is a pleasant book to read, and a valuable one to possess.

Cattle Manure in Bags *Shredded or Pulverized*

Best and safest manure for florists and greenhouse use, absolutely pure, no waste, no danger. Write for circular and prices.

The Pulverized Manure Co.
21 Union Stock Yards, Chicago.

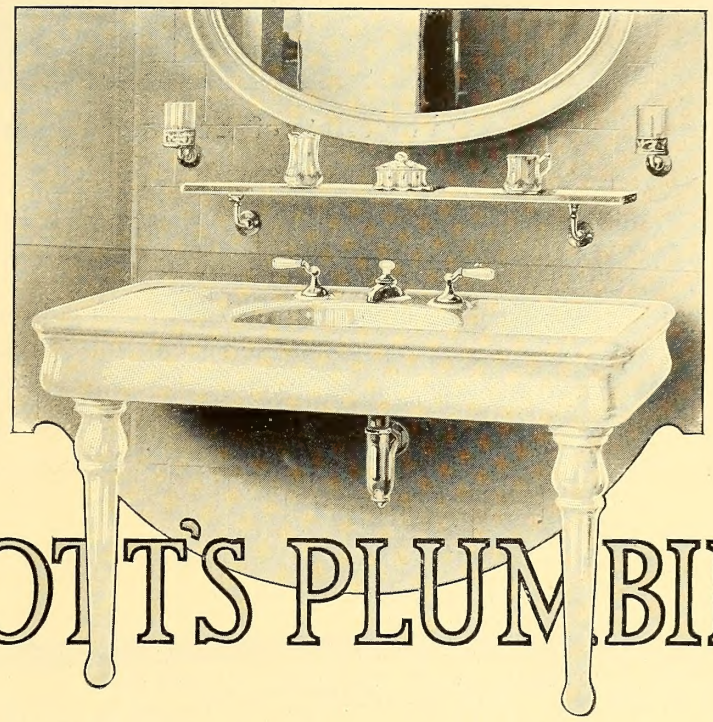
"CORTRIGHT" METAL SHINGLES

TO ARCHITECTS:

A Merry Christmas and A Happy New Year

We take advantage of this season of good will to seek your closer friendship. Our mission is to solve the roofing problems with which you are confronted, and it is from you that we can best learn these needs. On the other hand *we* can help *you.* Our long experience and special knowledge of the metal roofing business is yours to command. Estimates, Specifications, Special Designs, anything to help good business along. Perhaps you are not fully informed as to the strong points of CORTRIGHT METAL SHINGLES—Our 56-page illustrated book, "*Rightly Roofed Buildings,*" is yours for the asking. Drop us a card, we'll do the rest.

CORTRIGHT METAL ROOFING CO.
PHILADELPHIA CHICAGO



MOTT'S PLUMBING

THE extra-large lavatory, with ample space for toilet articles and thorough comfort in washing, is characteristic of Mott's leadership in design. The Marsden (illustrated) is one of several models made in Mott's Imperial solid Porcelain—a porcelain of the most durable quality.

When planning bathroom equipment, send for our booklet, "MODERN PLUMBING" which shows the most advanced types of fixtures in Imperial and Vitreous Porcelain and Porcelain Enameled Iron-ware. 24 illustrations of model interiors suggest equipments ranging in cost from $85 to $3000. Full description and price of each fixture is given, with general information regarding decoration and tiling.

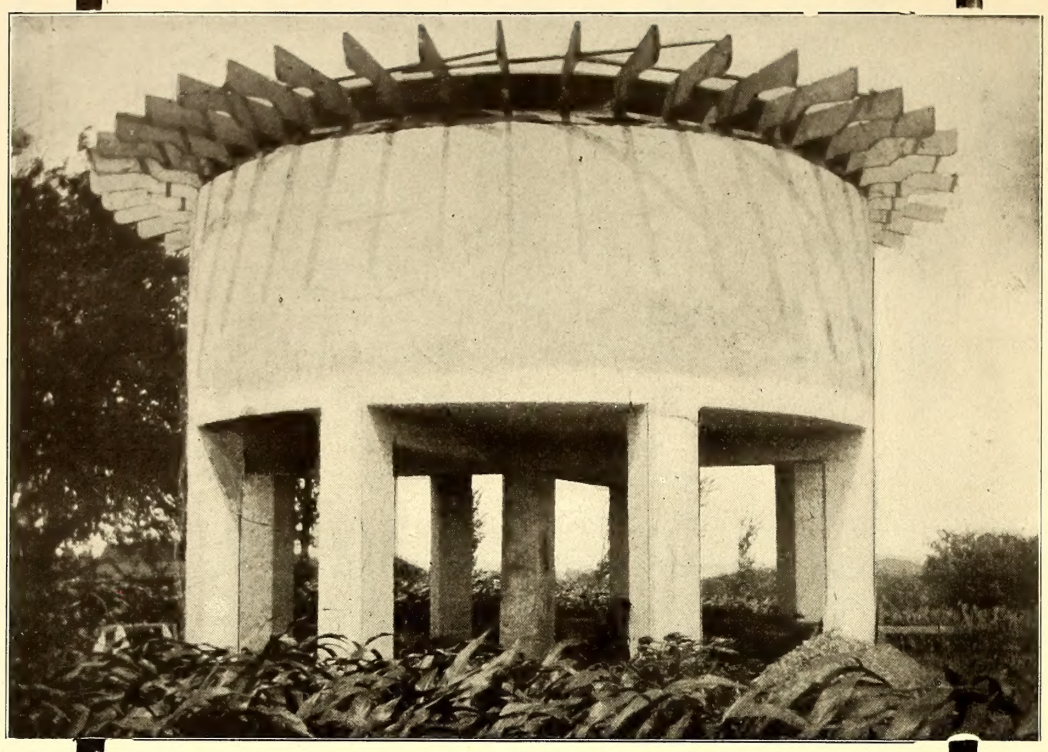
"Modern Plumbing" will be sent on receipt of 4 cents to cover postage.

THE J. L. MOTT IRON WORKS
1828 :: *EIGHTY YEARS OF SUPREMACY* :: 1908
FIFTH AVENUE AND 17TH STREET, NEW YORK CITY

BRANCHES: Boston, Chicago, Philadelphia, Pittsburgh, Denver, Detroit, Washington, Montreal, St. Louis, New Orleans, San Francisco and San Antonio.

FLOORS

ROOFS



A concrete tank erected on estate of Edmund Tatham, Katonah, New York

Frederick J. Sterner, Architect - - New York
De Lancey A. Cameron, Builder - - New York

Tank designed for storage supply of 15,000 gallons, built entirely of concrete reinforced with Clinton welded wire. Before roof was placed over tank, and during winter months, ice 10 inches thick formed on water stored therein. No cracks or leakage have developed.

Clinton Wire Cloth Company
CLINTON, MASS.

Ceilings

FIREPROOFING DEPARTMENT
ALBERT OLIVER
1 MADISON AVE., NEW YORK

WASHINGTON: ROSSLYN SUPPLY CO., COLORADO BUILDING
SYRACUSE, N. Y.: PARAGON PLASTER CO.
ST. LOUIS: HUNKINS-WILLIS LIME & CEMENT CO., SOUTH END 18TH ST. BRIDGE
SAN FRANCISCO: L. A. NORRIS, 835 MONADNOCK BUILDING
SEATTLE: L. A. NORRIS, 909 ALASKA BUILDING

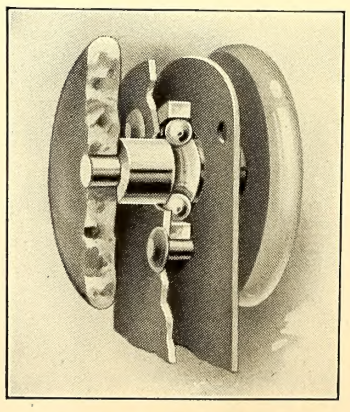
Partitions

Lane's Trolley Parlor Door Hangers and Track

THE particularly distinguishing features of the Lane Trolley Door Hanger equipment are the excellence of the ball bearing and the lateral as well as vertical adjustment of the track.

Lane Trolley Hangers are made in both the rigid and adjustable pendant styles and with both single and double trucks. All are fitted with machined and hardened ball bearings as shown and in all the various details the quality of Lane products is maintained, thus virtually placing them in a class by themselves.

Send for Complete Catalog.



SECTION BALL BEARING IN LANE TROLLEY HANGERS

LANE BROTHERS COMPANY, (The Door Hanger Manufacturers)
434-466 Prospect Street, Poughkeepsie, N. Y.

Paint Without Oil

Remarkable Discovery That Cuts Down the Cost of Paint Seventy-Five Per Cent.

A Free Trial Package is Mailed to Everyone Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powdrpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manuf'r., 16 North St., Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write to-day.

Build Your Own Incubators and Brooders

and save half the purchase price. Any one can do it with my plans. I furnish the mechanical parts, Lamps, Regulators, etc., at low prices. My New Burner, Tandem Thermostat, and Special Heater, will save half the oil, half the time, and cost of operation. Fit any Incubator or Brooder. More than 25,000 have built their own Incubators and Brooders with my plans and fixtures. Not a single failure. My New LAMPLESS BROODER costs you only $4. I will send you my complete plans and catalog, prepaid, for only 25 cents to cover cost. Worth Dollars to you

H. M. SHEER, 464 HAMPSHIRE STREET, QUINCY, ILL

Take off your Hat to the YERS
Write for Circulars and Prices to
F. E. Myers & Bro.
Ashland, Ohio
THE PUMP THAT PUMPS
HAY TOOLS
BARN DOOR HANGERS
HAY RACK CLAMPS

Sheep Manure

Kiln dried and pulverized. No weeds or bad odors. **Helps nature hustle.** For garden, lawn, trees, shrubs, fruits and house plants.

$4.00 LARGE BARREL, Cash with Order. Delivered to your Freight Station.

Apply now.

The Pulverized Manure Co. 21 Union Stock Yards, Chicago.

Belgian Hares

Rufus Red, Registered, and Pedigreed Stock For Sale. Send three 2-cent stamps for Illustrated Catalogue.

Pleasant Ridge Rabbitry
Cor. Dudley St. & Hampton Ave.
Station B LONG BRANCH, N. J.

American Homes and Gardens and Scientific American

To one address **$5** per year Regularly $6

AMERICAN HOMES AND GARDENS

Price, 25 Cents. $3.00 a Year

CONTENTS FOR JANUARY, 1909

		PAGE
"Chesterwood," The Country Home of Daniel Chester French, N.A.: The Studio Entrance		2
Monthly Comment		4
Homes of American Artists—"Chesterwood," the Country Home of Daniel Chester French, N.A., Glendale, Massachusetts	*By Barr Ferree*	5
A Curious Collection of Bottles	*By Ada Walker Camehl*	11
Wild Animals in Captivity	*By Esther Low*	13
The Summer Home of Theodore Conrow, Esq., Water Mill, Long Island.	*By Charles Chauncey*	16
What Colonial Architecture Really Is	*By C. Howard Walker*	19
The Mimicry of Plants	*By S. Leonard Bastin*	25
The Residence of Atherton Clark, Esq., Newton, Massachusetts	*By Paul Thurston*	27
Colored Windows in the House		30
A Specimen of Mamillaria Rhodantha		30
The Dining-room	*By John A. Gade*	31
Bamboo in the Occident	*By Ida D. Bennett*	35
Economizing Garden Space	*By Craig S. Thoms*	37
A San Antonio Bungalow	*By Smith Anthony*	38
Correspondence:		
Problems in Home Furnishing	*By Alice M. Kellogg*	40
Garden Work About the Home	*By Charles Downing Lay*	40

New Books.
Estimating What Your House Will Cost.

Combined Rate for "American Homes and Gardens" and "Scientific American," $5.00 per year
Rate of Subscription of "American Homes and Gardens" to foreign countries, $4.00 a year
Rate of Subscription of "American Homes and Gardens" to Canada, $3.50 a year

Published Monthly by Munn & Company, Office of the "Scientific American," 361 Broadway, New York

CHARLES ALLEN MUNN, President - - - - FREDERICK CONVERSE BEACH, Secretary and Treasurer
361 Broadway, New York 361 Broadway, New York

[Copyright, 1909, by Munn & Company. Registered in U. S. Patent Office. Entered as second-class matter, June 15, 1905, at the Post Office at New York, N. Y., under the Act of Congress of March 3, 1879]

NOTICE TO CONTRIBUTORS—The Editor will be pleased to have contributions submitted, especially when illustrated by good photographs; but he cannot hold himself responsible for manuscripts and photographs. Stamps should in all cases be inclosed for postage if the writers desire the return of their copy.

"Chesterwood," the country home of Daniel Chester French, N. A.: the studio entrance

AMERICAN HOMES AND GARDENS

Volume VI January, 1909 Number 1

The terrace doorway at "Chesterwood"

Monthly Comment

THE artist brings to the adornment and equipment of the house a special feeling for artistic fitness and a personal note of comfort and achievement that places the houses designed and furnished under such auspices in a class of their own, wholly apart from the upholsterer's or machine-designed house with which many people are not only forced to be content but in which they actually delight. This is one of the strange things in household furnishing, that so few know how to do it properly, and so many are satisfied with the most unsatisfying objects. A richly furnished room is, for example, very highly thought of in many quarters. This means, in most cases, a gathering together of a most elaborate collection of furniture. Tables, chairs, cabinets and ornaments of the most wonderful architecture and most sumptuous style are arranged in spaces that, as likely as not, are scarce big enough for a single one. The room is thronged with costly objects, objects costly, for the most part, from the material of which they are composed, and from their size, or, perchance, their acknowledged rarity; pictures whose art qualities are apt to be measured by the splendor of their gilded frames are hung on walls of expensive silk; wherever display can be introduced it is brought in to be looked at or to be in the way. Everything, in short, that can be put into a room is placed within it; and the elect, and may be some outsiders, are forthwith invited to come in and enjoy the spectacle.

THIS, of course, is gaudiness and nothing else. The most richly furnished room in the world contains no furniture whatever; but its walls were frescoed by the immortal genius of Raphael. For four centuries the genius of that wonderful artist has been worshiped in the Stanza della Segnatura, which, after all, is but a room, perfectly adapted to room utilization, but glorified beyond compare with the masterpieces painted on its walls. And in the grand old days of the Renaissance there were many such splendidly and richly furnished rooms that were rich and splendid because the rooms themselves were so, and not because they were crowded with costly pieces of furniture more wonderful to look upon than available for use. Such rooms are no longer built and decorated now, and are, indeed, quite outside the possibilities of the American house, ordinary or extraordinary. But it is an advantage to refer to such apartments as quite destroying the modern upholsterer's claims to pre-eminence in household decoration.

THE plain fact is that most modern houses are essentially shoppy. And they are necessarily so. Very few people can give to the problem of household decoration and furnishing the time and thought it requires, or even so much as possess the knowledge requisite to success in such matters. Dependence is, therefore, placed on the shops. Mighty attractive many of these places are, and fascinating and beautiful are much of their contents. We can not get along without them, for where else would we buy anything? This question reveals the whole secret of the inability of the modern commercial house to solve the problem of household decoration in an artistic way. They are commercial. They exist for the purpose of selling goods. They are maintained that their owners and proprietors may reap profits for themselves. The shop that sells the most goods is the most successful. In other words, the monetary returns constitute the criterion of success.

Now the artist, when he undertakes a problem, is actuated by quite different motifs. He must, it is true, be paid for his work, and it is most right and proper that he should be paid, and liberally too. But his initial idea is to create something. Art is not manufactured, but created, and the artist both knows and feels that his own share in this creation is a personal and important one; he knows that success in one piece of work will bring him opportunities for other work; and he realizes, as the commercial man can never do, that his personal reputation for excellence or superiority or artistic supremacy—call it what you will—is his most precious and valuable asset.

THE artistic ideal is, therefore, directly opposed to the commercial ideal. The commercial man does the best he can, but his measure of success is the volume of his sales. Ask any merchant and he will immediately proceed to measure the results of his last year by this very available thermometer. If he sells beautiful things, and thus helps to distribute beauty throughout his world, it is because he finds it profitable to do so. The artist has other things to think about and other ideals by which the standard of his success is measured. His one object in life is to create works of art; and these, not mere passing fancies of the moment, but creations of permanent merit by which he will be known and respected and on which his fame will rest. His is a personal work, too, endowed with his personality, alive with individuality, permeated with thought and the result of an honest endeavor to attain the highest possible standard.

WHEN a mind so attuned to lofty thought applies itself to the practical problems of household decorations the results are immeasurably superior to the machine work turned out by the mill-shops and commercial emporiums. How can it be otherwise when one seeks results, and the other sales? So the artist need bring only his own genius to his problem, be it as simple or as complicated as it may, and the solution will, in every case, be beautiful. This is not only the true secret of household decoration, but the only one. There is no mystery about it, save personality. There is no need for display, only for taste. There is no need for costly furniture nor to bring in high-priced decorative adjuncts; all that is required is a sense of the beautiful and the work is done.

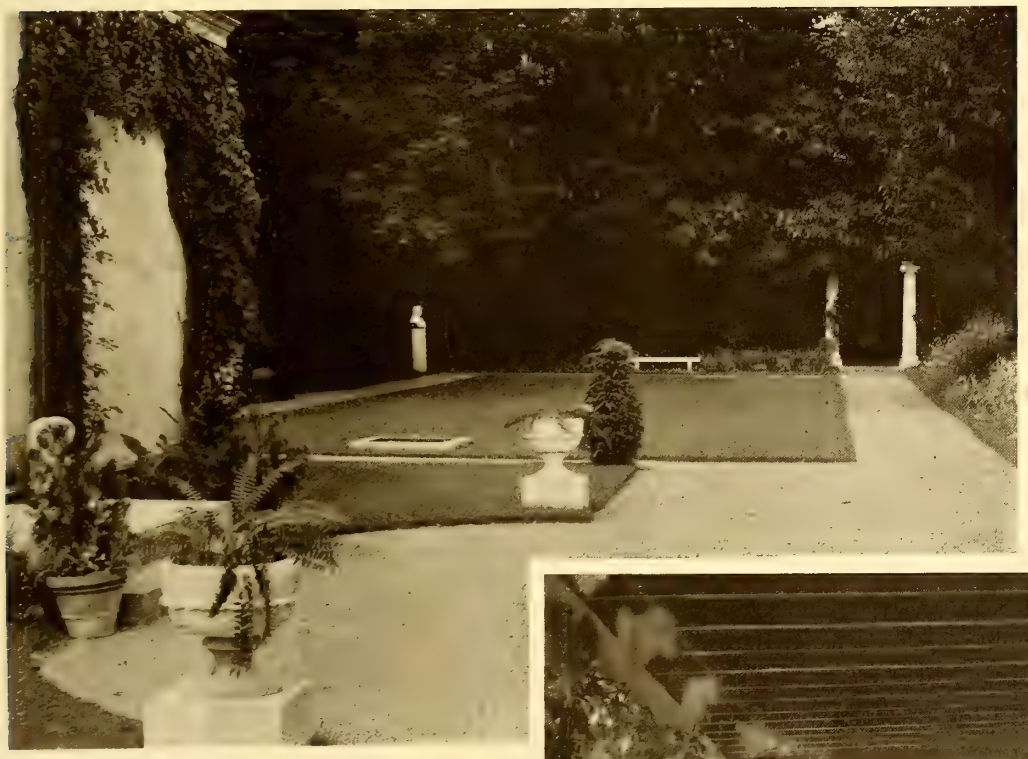
THE artist's home is not necessarily rich and elaborate; as a matter of fact it is oftenest quite the reverse; but it can be depended upon to be charming and interesting, a personal home, rich in artistic association, harmoniously arranged, and speaking aloud in every part of the individual art of the designer who has created it. The artist knows when a chair is good in itself and when it is available for a certain place. He knows color and form; he is familiar with combinations and arrangements; he has taste and discretion. All these things go to make a beautiful home, and are qualities and properties that can not be purchased by the yard nor bought by the pound. Hence the great and delightful interest of the artist's home. It need not be rich nor costly, it may not be large nor elaborate; but it may be notable in the truest sense of the word, since no effort has been made to impress by luxurious fittings nor by elaborate furnishings. It represents art, in the true sense, as applied to household problems. This is something that is not only rarely seen, but whose true value is little known. A glimpse or two into an artist's home will demonstrate this quality.

Homes of American Artists

By Barr Ferree

"Chesterwood," the Country Home of Daniel Chester French, N. A. Glendale, Massachusetts

A BROWNSTONE column, old and somewhat weather-beaten, stands on a knoll to the right as one approaches "Chesterwood" from Stockbridge. It marks the entrance to Mr. French's very beautiful estate, a tract comprising about a hundred and twenty-five acres, and which lies on both sides of the main highway that skirts the lawn below the house. It is a charming place of woodland and open fields,

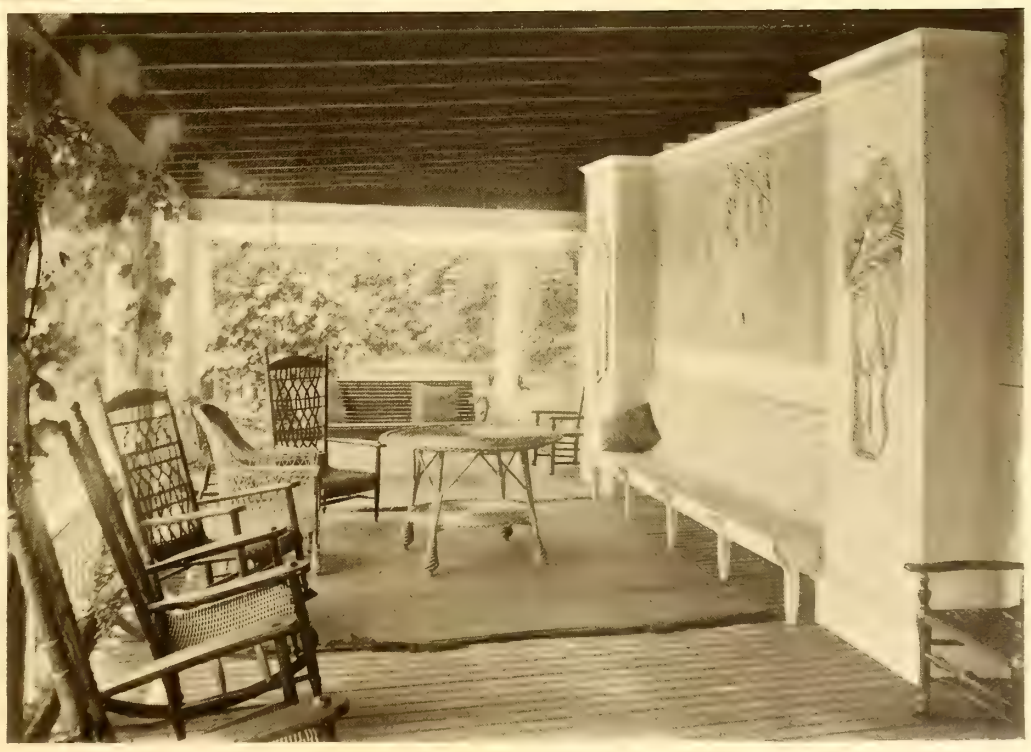


Lawn and woods beyond the studio

of valleys and hills, even of mountain sides; and situated as it is, in the heart of the Berkshire Hills, it not only commands magnificent views from every viewpoint, but is itself a delightful part of the whole beautiful vicinity.

The knoll opposite the brown column needs no monumental emphasis, for a group of apple trees grows right at the opening. The entrance driveway opens here, and is grassed on either side. On the right is a border of young hemlocks; on the left are apple and pear trees, variously spaced. A short distance within a branch road plunges beneath a lofty flat archway embedded in a luxuriant mass of wild grapevine; beyond it is thickly grown: hemlocks to the right, apple trees, lilac bushes and other shrubs to the left. There is immense utility in this branch road, which presently reappears further on, and again joins the main road, for it is the service entrance; yet it is so completely hidden and so densely grown that the keenest eye can not penetrate to what is within, and can only guess to what it leads, all of which helps to give it value.

Meanwhile the main road moves on to the house, which is located upon its left; a second branch leads to the barn and stables far up on the right; on one side is a great clump of lofty sumacs, on the other a low border of locust, behind which is the farm and vegetable garden. And so with these, and many other plantings of beautiful shrubbery, the drive reaches the house, and one dismounts at the entrance porch. It is a modest and simple dwelling: stuccoed, light granite gray in color, gray woodwork, sage green door and blinds, and brown shingled roof. Designed by Mr. Henry Bacon, architect, of New York, it is delightfully adapted to its



Decorative sculptures of the studio porch

The terrace front overlooks the lawn, with a marvelous view beyond

The b

situation, a house that belongs here. It is very well studied, but with that supreme care that gives no hint of it. Now that it has been built one realizes that any other sort of a house than this would have been impossible in this situation, and, one may also believe, quite impossible of occupancy by the distinguished artist whose loving care and fine appreciation of the beautiful has embowered the house with grounds and plantings of unusual interest and beauty.

Notwithstanding the importance of the house in any country region, it is but the simple truth to say that one lives in the Berkshires for the outdoor beauty and not for the elegance and costliness of the houses. Mr. French has developed this idea with singular beauty and complete success. There is no vast estate decoration, no formal gardening in an architectural sense, but, what is very much more delightful, a multitude of interesting spots and unexpected beauty, some of them related to each other in a connecting sense, some seemingly sporadic, yet all distinguished by an harmonious feeling for beauty that is at once distinctive and penetrating. In short, the mind of the artist, his creative sense, his feeling for beauty, his love for nature are abundantly apparent at every point. This is the supreme quality of this beautiful estate, a quality as rare as it is fine; for one realizes, as one wanders through these grounds, that here is something beyond the unusual, and actually in the realm of the artistic.

Beyond the house is the studio. This is a rectangular building with lofty windows and high, shingled, skylighted roof, carrying a central louver. On the north a lower part serves as a reception-room. Here, in the center, is a doorway, with a high glazed semi-circular tympanum rising above the cornice. As in the main house the walls are plain; on

The hall, with its fine old furniture and tapestry paper

The dining-room has blue w

st room

A modest simple dwelling: stuccoed, light granite gray in color

each side of the door is a green trellis that supports clematis; beyond, at the ends, is Virginia creeper. On the step are two grotesque marble dolphins, and at the base are two small red terra-cotta jars, each containing a mimic Scotch pine. A great gray-pebbled circle lies before the door; in the center is a marble block supporting a large yellow-brown pottery jar. The further border of the circle is arranged as an exedra, with a semi-circular seat of concrete with marble ends. In the center are marble steps to a higher pathway; here and at the ends are red pots containing small bushes of pyramid box. Above the steps is a grassed path that presently loses itself in the distant woods. At the beginning it is bordered with peonies, high-growing lilies and tree hydrangeas, which are continued to two stands of clematis and a couple of poplar trees. Then comes an apple orchard, and here the path border consists of large ferns; further off these give way to mountain laurel, and finally, when the path has penetrated the dense wood, the border is low hemlocks. On the left, at the beginning of the path, is the tennis court, so overshadowed by the woods as to be completely without sun in the afternoon.

One enters the enchanted space in which all this simple beauty lies through a picket gate in a brick wall, drab painted and overgrown with Virginia creeper. Just without are two shaped hemlocks. On the right is a low stone wall, capped with white marble, above which is a hedge of clipped lilacs. Inside a brilliant flower border of hardy phlox, golden glow, larkspur, poppies, lilies and other gay flowering plants runs to the exhedra and beyond it. The forespace there is arranged with great simplicity but in quite a formal way. On the left is a square of lawn; sunk in it, near the studio, is a small square lily pond with white marble border. The lawn

and rare Colonial furniture

The drawing-room mantel is red Numidian marble

The terrace front overlooks the lawn, with a marvelous view beyond

The breakfast room

A modest simple dwelling: stuccoed, light granite gray in color

situation, a house that belongs here. It is very well studied, but with that supreme care that gives no hint of it. Now that it has been built one realizes that any other sort of a house than this would have been impossible in this situation, and, one may also believe, quite impossible of occupancy by the distinguished artist whose loving care and fine appreciation of the beautiful has embowered the house with grounds and plantings of unusual interest and beauty.

Notwithstanding the importance of the house in any country region, it is but the simple truth to say that one lives in the Berkshires for the outdoor beauty and not for the elegance and costliness of the houses. Mr. French has developed this idea with singular beauty and complete success. There is no vast estate decoration, no formal gardening in an architectural sense, but, what is very much more delightful, a multitude of interesting spots and unexpected beauty, some of them related to each other in a connecting sense, some seemingly sporadic, yet all distinguished by an harmonious feeling for beauty that is at once distinctive and penetrating. In short, the mind of the artist, his creative sense, his feeling for beauty, his love for nature are abundantly apparent at every point. This is the supreme quality of this beautiful estate, a quality as rare as it is fine; for one realizes, as one wanders through these grounds, that here is something beyond the unusual, and actually in the realm of the artistic.

Beyond the house is the studio. This is a rectangular building with lofty windows and high, shingled, skylighted roof, carrying a central louver. On the north a lower part serves as a reception-room. Here, in the center, is a doorway, with a high glazed semi-circular tympanum rising above the cornice. As in the main house the walls are plain; on each side of the door is a green trellis that supports clematis; beyond, at the ends, is Virginia creeper. On the step are two grotesque marble dolphins, and at the base are two small red terra-cotta jars, each containing a mimic Scotch pine. A great gray-pebbled circle lies before the door; in the center is a marble block supporting a large yellow-brown pottery jar. The further border of the circle is arranged as an exedra, with a semi-circular seat of concrete with marble ends. In the center are marble steps to a higher pathway; here and at the ends are red pots containing small bushes of pyramid box. Above the steps is a grassed path that presently loses itself in the distant woods. At the beginning it is bordered with peonies, high-growing lilies and tree hydrangeas, which are continued to two stands of clematis and a couple of poplar trees. Then comes an apple orchard, and here the path border consists of large ferns; further off these give way to mountain laurel, and finally, when the path has penetrated the dense wood, the border is low hemlocks. On the left, at the beginning of the path, is the tennis court, so overshadowed by the woods as to be completely without sun in the afternoon.

One enters the enchanted space in which all this simple beauty lies through a picket gate in a brick wall, drab painted and overgrown with Virginia creeper. Just without are two shaped hemlocks. On the right is a low stone wall, capped with white marble, above which is a hedge of clipped lilacs. Inside a brilliant flower border of hardy phlox, golden glow, larkspur, poppies, lilies and other gay flowering plants runs to the exhedra and beyond it. The forespace there is arranged with great simplicity but in quite a formal way. On the left is a square of lawn; sunk in it, near the studio, is a small square lily pond with white marble border. The lawn

The hall, with its fine old furniture and tapestry paper

The dining-room has blue walls and rare Colonial furniture

The drawing-room mantel is red Numidian marble

is surrounded by paths on all sides, a hedge of hemlock inclosing the space on the south. About half way to the woods it is broken by a pergola, a small square brick structure, with brick piers, low brick walls and white marble coping and capitals. It has a pebbled floor and is completely overgrown with grapevines and Virginia creeper. At the furthest extremity of the hemlock hedge is a white marble pedestal and bust. Just beyond it are woods, very dense and thick-growing. Turn to the right, and at the extremity of the other path are two Ionic columns, at the entrance to the wood. Within, under the dense shadow of the trees, is a marble pedestal supporting a colored terra-cotta bust of a lady by Mr. French's brother sculptor, Mr. Herbert Adams. It is a veritable little open temple in the woods, an art shrine in a very literal sense. A path into the woods begins here. It is very dense and wild, with gigantic lichened rocks and much underbrush. The path advances in an unkempt, woody sort of way, then loses itself in a circular clearing, grassed from edge to edge, with splendid trees uprising all around it. Then, with low fieldstone steps, it moves on anew, rising to a higher level, twisting and turning without apparent meaning, but more wildly, more woody, darkly, damply—if I must say it—with more great trees and many lesser ones. Suddenly it emerges, but hugs the woods to its left, while on the other side is an open field of wild flowers; far off on the right is the studio and the bright tops of its gay flower border. The glimpse is for but a moment, for the path immediately joins the grassed path that starts from the exedra before the studio door.

Ionic columns, with bust by Herbert Adams, N. A.

Dense and more dense are the woods, with many lofty hemlocks and tall, slender black birches. Then, all at once, one finds oneself in a silent open space; the birds scarcely chirp, even the insects are stilled; the air seems charged with serenity and charm and silence. In the center of a circle rises a splendid maple, a gigantic tree with lofty bole that, could it have been possible, might have been transplanted from the forest of Fontainebleau. It is a tree so high and lofty that its branches begin only above the tops of the surrounding trees. Right in the center, and where the woods are densest, is a great sculptured seat, new-made by Mr. French, of white cement, with solemn faces of sphinxes graven on the arm rests. Around and behind it are small hemlocks, standing as still as young soldiers, watching and guarding the secluded spot. Truly this is their duty, for across the clearing from the seat lies the figure of a sleeping child, a sculpture of Mr. Edward Potter, long associated with Mr. French in some of their most important works. No wonder it is still and quiet here, for this charming slumber must not be disturbed, and all nature holds its breath while the child sleeps on, day and night, in the safe seclusion of the forest!

The path that has brought us to this exquisite spot does not stop here, but is renewed beyond. The mountain side, which at the beginning was below one, is now above, rising sharply, with rocks more gigantic than the great ones below. The path breaks into two; one arm mounts the heights, the other goes onward, and is presently crossed by a rustic fence. And still it goes on. But enough! Long before this point has been reached the eye has been sufficiently saturated with woodland and decoration without penetrating further into the wilderness beyond.

I have described the house as simple and unpretentious, but some space must be given to its description, for its gentle beauty is quite of the same type as that which distinguishes the whole of the outlands and gardens. The little entrance porch is supported by two Roman Ionic columns, and has steps and floor slabs of white marble. You enter immediately into the hall, for as the house is used in summer only, no vestibule is needed. The hall runs straight through from north to south. It has a hardwood floor and a low wainscot of wood painted ivory-white; the upper walls are covered with a charming greenish tapestry paper, and there is a plain cornice and ceiling. There is much old furniture here, as throughout the house. An old-gold mirror hangs above a pineapple table, and on the opposite wall is a fine old Flemish portrait. To the right of the entrance is a recess behind two columns with capitals of Indian corn. The stairs to the second story rise within; in an arched recess is an old tall clock. Under the stairs is the door to Mr. French's room, a small apartment that he feels he can rightly call his own. It has the low white wainscot of the hall, with a dark steel-blue paper above. The fireplace has red brick facings and lining and a whitewood mantel and paneled overmantel.

Further on is the drawing-room, entered through a mahogany door. The woodwork is ivory-white, with low wainscot and striped paper in two tones of green. The cornice has little slit-like notches arranged in groups of four; the ceiling is plain. The fireplace has facings of red Numidian marble, with lining of red brick. The overmantel is of wood, paneled, and the mantel ornaments are chiefly antiques. Opposite is a triple window with dotted Swiss ruffle sash curtains and inner curtains of cretonne with stripes of roses. On each side are two silver antique girandoles, with candles within glass shades. The furniture is chiefly Colonial. This room opens on to a side porch; the doors are glazed to the floor and curtained like the window. The porch is stuccoed on sides and ceiling and is contained within three elliptical

A glimpse of the studio garden

The chief entrance to the studio

arches with frames of wood. The dining-room is immediately opposite the drawing-room on the other side of the hall. It has a white-painted wainscot and blue-figured two-toned paper. The wood mantel contains a fireplace with facings of red brick laid in reddish mortar and a similar lining. A large old-gold mirror is above the shelf. As elsewhere the furniture here is old and in fine taste. Beyond is the breakfast-room, which is actually a porch similar to the one which opens from the drawing-room. Its walls, decorated by Mr. French's sister-in-law, have a yellowish tone, with painted garlands of fruits and flowers. An Italian terra-cotta Madonna and Child is let into the house wall. The easterly archway is projected and trellised as a bay window; in the center is a small plaster figure on a black marble pedestal; without it is thickly overgrown with grape vines. The furniture is of wood painted dark green. A larger table top, in lighter green, with a painted circle of fruits and leaves, can be adjusted to the smaller center table when needed, and when not in use stands against the wall.

At each end of the hall is a door, with narrow window openings on either side from floor to ceiling. That on the north is the door of entrance; that on the south opens into a terrace and overlooks the whole valley below. The architecture of this front, which is the side presented to the road, is precisely that of the entrance front, save that the separate indication of the service rooms is not here apparent. On each side of the door is a triple window, one for the drawing-room and one for the dining-room; there are five windows in the second story and two dormers in the roof, which is shingled and has a balustraded summit. At each end is a porch, one of which serves as the breakfast-room. On the doorsteps are two hydrangeas in red terra-cotta jars. The steps descend to a pebbled terrace with a low border of

The gate to the studio garden

The exedra adjoining the studio

Japanese barberry. Without is a low stone wall with a coping of blue-gray marble and piers supporting red Italian pots with shaped plants of box and evergreens. Below is the lawn. Here are some fine fruit trees, and to the left, looking out, is a well, irregularly placed as regards the house, and contained within a wall of built-up stone, that belonged to an old farmhouse that gave place to the present house. The road is below, but not near, and is quite well beneath the lawn level. But to its greater concealment there is an irregular planting of shrubbery, roughly semicircular in form, and entirely naturalistic in effect.

The studio and its outer porch

There is a wonderful and marvelous view to be had from the door of the terrace front. One looks out over valleys and mountains above mountains, until, on a misty day, the furthermost seems so utterly removed that it is scarce believable there can be a world beyond it. In the foreground is a gigantic heap known as "The Monument"; "The Dome," called Mt. Washington in Massachusetts, is the name given to the most remote. But mere names are unimportant here, exactly as mere words are inadequate to describe the loveliness and the grandeur of the outlook. "It was what brought us here," said Mr. French, and truly the whole vicinity contains no more superb attraction.

Sculptured seat in the woods

One naturally begins at "Chesterwood" with the studio, and one quite as naturally ends with it. A little porch on the side admits the visitor to a handsomely furnished reception-room, while the studio occupies the whole of the inner portion of the building. As a matter of fact this is not the only workshop on the place, for Mr. French has another studio at some distance off across the road, on the edge of a declivity, which is used for work designed to occupy an elevated position on a building. On the south side of the smaller studio is a porch, with pergola ends or wings. The building has no windows here at all, and but a single small door on one side that opens directly into the workroom. In the center of the wall are two piers, each with a figure carved and sunk within its surface. On the plain wall between them is a delicate festoon, and below is a great bench. It is a majestic and remarkable decoration, truly emblematic of the noble uses to which this structure is put, and finely typical of the artistic sensibility of the great artist who works within.

No one knows the time when the Berkshire Hills have not presented their wooded summits to the blue vault of heaven; one can, perhaps, count the time during which they have been known to civilized man. Yet immortal as these hillsides are, so also is the fame of the delightful and cultivated gentleman who, in the intervals of his professional work, has created this charming and lovely place. Of nature beauty the Berkshires have a plenty and to spare, yet new renown and fresh fame must come to them because of the noble works of genius this quiet artist is silently creating on Glendale's hillside. Mr. French has been fortunate in being able to develop a simple estate, ample for every demand he might make of it.

The sleeping child, by Edward Potter, N. A.

A Curious Collection of Bottles

By Ada Walker Camehl

AMONG the numerous fads and fancies of the house furnisher of to-day none is more quaint and interesting than the decorative use of the vari-colored bottles and flasks of many shapes and sizes, which are relics of one of the oldest enterprises of our country. These bottles are found in a great variety of color, ranging from dark browns, blues and reds to lighter shades of olive, russet, claret, emerald green, pale blue and transparent white. When grouped upon a tall mahogany sideboard or table, and placed so that the sunlight falls upon them, they form a rich and effective mass of decoration.

The shapes of these bottles are many and curious. There are tall bottles with long necks and fat bodies, short squat bottles with scarcely any necks at all, bottles with ribbed edges and bottles with plain edges. Each manufacturer had his own peculiar contour, length of neck or character of ribs; and, as glassware did not bear the maker's mark as did the earthenware of the same period, the age of the bottles is discovered by these characteristics alone.

The oldest bottles are distinguished by the shape of the mouth, which is straight and plain, and was cut off with shears irregularly at the top while still plastic; and also by the rough circular scar on the bottom, left when the bottle was broken off from the punty rod by the workman. Bottles of a later date have a rim around the mouth and a smooth, hollow base, due to the improvement in manufacture whereby a case was used to hold the glass. Later still, bottles and flasks were made with plain, flat bottoms.

Not only are these bottles interesting in form and color, but the decorations upon them are of peculiar historical value to Americans, as they bear portraits of many of our national heroes, and many of the incidents of our early history are recorded upon their sides.

The story of our glass manufacture goes back to the time of our Colonies, when glass bottles and beads were made for trade with the Indians. But the chief interest to a bottle collector lies in the output of the first half of the nineteenth century. During those years the potters of Staffordshire were decorating blue dinner sets with portraits of our political and military heroes, and sending them in great quantities to our shores. The exceeding popularity of these historical dishes prompted the makers of bottles to adopt the same practise; and straightway the faces of Washington, Franklin, Lafayette and other national characters were blown in the sides of flasks. Many of the portraits are easily recognizable, and reflect credit upon the artists who made the design.

A railroad bottle of 1825

A Charley Ross bottle

A Pike's Peak bottle

A Jenny Lind bottle

A group of old American bottles

Two examples of New England book bottles

The American eagle and shield, various Masonic emblems, a cornucopia filled with fruit, and vases of flowers, were also used. I have seen a curious old American bottle in the form of a violin, with the glass colored the soft yellows and browns of that instrument.

One of the oldest and most historic is the railroad bottle, made in 1825. Our first railroad was a primitive affair of wooden rail and horse power, yet its memory survives in these quaint glass souvenirs. The one pictured in the illustration is of a rich brown color, and has in relief on one side a horse drawing a loaded car along a wooden rail. Above are the words "Success to the Railroad." On the reverse is the American eagle and stars, all in relief. The story of the "Success" thus naively predicted, and since made real in our twentieth century rolling palaces of speed and luxury, would be an Arabian night's entertainment to the originator of this quaint design. Another railroad bottle has the word "Railroad" in relief above the horse and wagon, while below is the word "Lowell."

Two book bottles; the large one holds three quarts, the small one, one pint

The bottle bearing the head of General Lafayette on one side and of De Witt Clinton on the other commemorates the opening of the Erie Canal in 1825, at which ceremony the French General was present.

The famous "Log-cabin" and "Hard Cider" campaign of 1840 is responsible for bottles in the form of a log cabin. These have a door and windows indicated upon them, and upon the sloping roof the date "1840" appears. The chimney serves for the mouth of the bottle.

Our war with Mexico in 1846-47 gave occasion for special designs in bottles. The head of Zachary Taylor, with the words "General Taylor never surrenders," appears upon some; while others bear the bust of Capt. Braxton Bragg, with General Taylor's famous command to him, "A little more grape, Captain Bragg," in raised letters above the head.

Bennington cow cream jug

Bennington dogs and Toby

The rush for gold to California, beginning in 1849, gave rise to bottles with exceedingly realistic decoration. The long-faced gentleman in the illustration in military cap and claw-hammer coat, with his bundle of mining tools slung over his shoulder, is evidently making rapid strides into the West. His attire no doubt is meant to signify the haste in which he left his home. Old residents of Western New York remember seeing "prairie schooners" passing westward along the road from Buffalo to Chicago, with "Pike's Peak or bust!" painted on the canvas covers. Returning stragglers displayed only the last word of this motto.

The Jenny Lind and Kossuth bottles commemorate the visits of those famous celebrities to our shores, while the bottle bearing the face of Charley Ross recalls one of the saddest incidents of its kind in our history.

The collector in his search for bottles will find curious specimens made in the shape of books. These are of various sizes. The largest one in the illustration will hold three quarts, and the smallest one pint. The mouth is situated near the back of the book. These bottles are not made of glass, but of the rich brown pottery of Bennington, Vt. Old people tell me that these book-bottles were designed in this form so that liquid refreshment of various sorts—buttermilk, cold tea, or possibly something stronger—might be conveniently carried to church services, which, in olden times, were affairs of the whole Sabbath day. The morning service was followed by intermission for rest and luncheon before the service of the afternoon. Another story is to the effect that these book-bottles were made to evade the prohibition laws of New England. The words "Departed Spirits" which are imprinted in the back of one of the smaller bottles leave the reader in puzzled uncertainty as to whether they were meant to apply to the inner condition of the bottle or to direct the thoughts to realms above.

About eighty different designs of old glass bottles have been found. They are not to be despised as plebeian. They deserve a place beside the cherished china and pewter of their own generation, and should be carefully preserved.

Wild Animals in Captivity

By Esther Low

SO RAPID and general is the encroachment of civilization upon the still wild portions of the continent to-day that the time is not inconceivably distant when these unexplored or unsettled territories will be completely given over to man. And with this slow but certain domination arises the almost inevitable assimilation of the aboriginal inhabitants and the complete extinction of the fauna, the latter usually taking place with extraordinary rapidity. An unfortunate example of these truths is the present condition of the American Indian and the American bison, the first disappearing and hopelessly degenerated, and the former countless millions of the second represented here and there by a few small herds in private parks or zoological gardens. Here, too, become evident the invaluable services of zoological collections, not only as a means of present education, but also in the preservation for our future generations of the rapidly vanishing animal species of to-day.

New York City is peculiarly fortunate in the possession of two excellent collections of this character, the old Central Park Zoo, the favorite haunt for generations of the city's children, and the splendid New York Zoological Park inaugurated a few years ago in the Bronx, and to-day comparing favorably with the foremost institutions of like character in the world. It would be too ambitious to discuss both these zoological collections in detail in this sketch, which is intended to be merely explanatory of the accompanying illustrations which were made from photographs taken at random among the animals both in Central Park and in the Bronx. One of the most attractive features of the latter institution is unquestionably found in the spacious buildings in which the animals are housed, structures not only fully answering the purpose for which they were intended, but which please the eye with their architectural beauty as well. Massive stone and handsome woodwork, glistening tiling, mosaic and quantities of appropriate plants have almost done away with the idea that the exhibition is one of caged wild animals, while the latest improvements in sanitation and ventilation have practically obviated a feature formerly so difficult to disassociate from zoological collections—the offense to the sightseer's poor nose.

Hard traveling for the elephant in Bronx Park

Those of the illustrations which were taken in Central Park are of Dewey, the patriarch of the lion house; of Jennie, the largest leopardess; of Keeper Snyder's trick elephant Hattie, and of the curious Tibetan yak. The artistic value of the first two photographs mentioned needs no remark. The splendid head of the great lion is shown in a characteristic pose which goes far toward substantiating the title "King of the Beasts." Striking, too, is the head of the great spotted cat, with its heavy light and shade effects. The muscular relaxation of its quiet dignity still does not conceal the lurking menace ever present in the inscrutable eyes. The leopard is undoubtedly one of the least reliable of the cat family, and Jennie's facial expression, quite opposite to Dewey's open defiance,

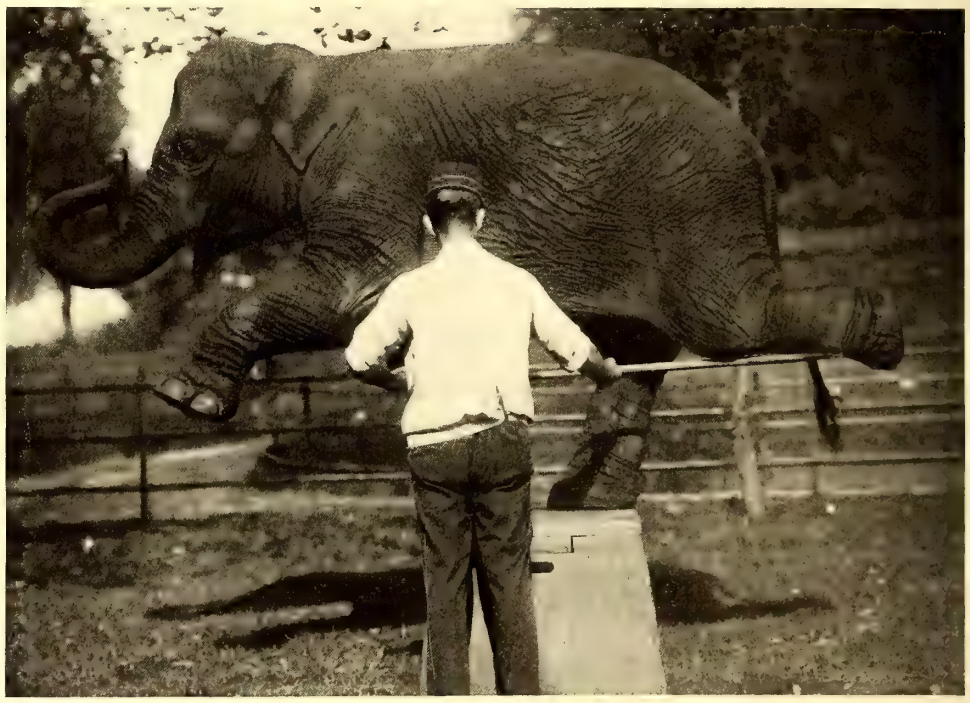
The Tibetan yak in the Central Park collection

articles of food. The domestication of the yak first took place centuries ago—how many it is impossible to say—and to-day a great part of the wealth of Tibet is counted in herds of this useful animal.

The four remaining photographs were taken in the New York Zoological Park. The buffalo is one of the largest bulls in the fine herd which the collection includes.

The great shaggy head wears a rather bored expression, for in order to take the photograph, Mr. Bison was interrupted in the pleasurable occupation of eating his lunch, and as the photograph shows, he did not even have time to use his napkin. The illustration gives the observer a good idea of the massive head and powerful fore-quarters of these wild cattle of the plains, now unfortunately practically extinct. The elephant is of about the same size as Hattie, and nearly as clever. It is used to carry the children, who obtain the

does not contradict this characteristic. Keeper Snyder, who is well known to the New York public as an expert elephant trainer, is here shown putting his favorite, Hattie, through her clever paces. Hattie, despite her worried expression, is a most affable creature and we feel sure that the difficulty of her balancing act quite warrants her perturbation of mind. The yak, photographed at the door of his domicile, is an inoffensive creature as a rule, though his undomesticated relatives of the Central Asian mountains will sometimes charge upon hunters or travelers with the utmost ferocity. To the inhabitants of Tibet, which country is Mr. Yak's native heath, he is practically invaluable, being used as a bearer of burdens where no other four-footed creature can go, his thick, soft fur supplying his master with excellent covering, while yak milk, butter and flesh are said to be without equal as



Hattie performing one of her difficult tricks

The Silvertip grizzly presented by the Engineers' Club to the Bronx Zoo

exciting pleasure of an elephant ride upon the payment of a nominal sum. As the photograph was taken, the huge pachyderm was stepping over the wire fences along one of the walks, and it is ludicrous to see the almost painful carefulness with which the ponderous foot is raised so as not to injure the obstacle. The two bears are of the European Brown variety, and are the particular friends of the keeper shown in the engraving. So peaceful and even suppliant do they look as posed for the picture that it is hard to imagine the enormous muscular effort and blind rage of which they are capable when aroused. The single bear on the rock is a very large Silvertip Grizzly, presented to the Park by the Engineers' Club of New York City. The grizzly is acknowledged to be one of the most powerful and ferocious animals in existence, and the appearance of that

A prominent member of the Buffalo herd in the Bronx

Two gentlemanly European brown bears in the Bronx Park Zoo

member of the family shown in the illustration does not belie these characteristics, notwithstanding that his object appears to be merely the peaceful acquisition of a peanut in the keeper's hand.

A great deal of unnecessary sentiment is unquestionably wasted on the subject of animals in captivity. If animals are truly thinking beings it is often supposed that they suffer many real as well as many imaginary harms, injuries. Nature writers to the contrary, it still remains true that we do not know what animals may think—if they think at all—on any subject. It is impossible, therefore, to certify as to their views on captivity with even a tolerable degree of certainty. We know, of course, that even in the most favorable conditions the circumstances attending captivity in menageries and collections of animals do not approach the reality of existence in more than the most casual manner. But against this is to be placed the great fact that animals in captivity are, as a rule, better care for, have better quarters, have more abundant food supplied with quite unnatural regularity, than any wild beast can possibly have.

Doubtless it is true enough that the animals so situated do not know this. Their natural state is free, and without their natural freedom even human care and regular food can not successfully compete. Creature comforts, indeed, sometimes seem quite secondary to wild animals, who often enough refuse to recognize or value the care that is lavished upon them.

Modern zoological science, as typified and exemplified in the modern zoological garden, rises as completely to the requirements of natural living as it now seems possible to do. This is particularly true of the garden of the New York Zoological Society. We have, at all events, no reason to assume that the animals there housed are not treated with the most intelligent care.

Dewey, one of the fine lions in Central Park

Jennie in an effective pose

The Summer Home of Theodore Conrow, Esq.

Water Mill, Long Island

By Charles Chauncey

MR. CONROW'S summer home presents a scheme for a house which not only combines all the essentials for a summer home, but is also well adapted by its arrangement of rooms for an all-the-year-round house. Mr. Aymar Embury, II, of New York, was the architect of this house, and he has very ably demonstrated his ability to build a house which may contain the usual number of rooms required by a good sized family, fitted with all the appointments which are necessary for a well regulated house, and to inclose the whole with an exterior that is representative of good, wholesome construction and unique and pleasing to the eye. And this, if you please, for the small sum of seven thousand dollars.

The elevations of the house are broken sufficiently to take away its square lines and at the same time permit of a little freedom in design.

The foundation is built of stone, and the underpinning of brick. The feature of the exterior is the piazza, which has massive piers built of concrete blocks, laid with a wide mortar joint, so that a different appearance from the usual form is produced. The openings between these piers are partly veiled by a trellis of lattice work on which there are growing vines. The exterior walls are of shingles placed on the regulated construction walls, and are stained a soft brown color, while the blinds and sash are stained a similar color in a darker tone.

The living-room, reached direct from the piazza, extends across the entire breadth of the house. It is trimmed with cypress, stained and finished in a Flemish brown. At one end is a fireplace, built of brick and finished with a wooden mantelshelf. The staircase, while outside of the line of the living-room, is a part of it, for it opens into it from a recess in which the stairs are built, by an open balustrade. The newel post is formed by a square column extending to the ceiling and supporting a beamed arch. The walls of the living-room are covered with a dull green burlap.

The abounding comforts of a spacious piazza

The dining-room is furnished in a yellow color scheme

The library has a soft brown stained trim and brick fireplace, with a hearth and facings built of similar brick, and a mantel. Bookcases are built in on either side of the fireplace. The walls are covered with a crimson burlap, and white and green striped curtains of soft material are hung at the windows.

The dining-room trim is finished with a yellowish-brown stain, while the walls are covered with a mustard colored burlap. The curtains hung at the windows are of a yellow and white striped material.

The butler's pantry, fitted with drawers, cupboards, sink and closets, has double-acting doors from both the dining-room and the kitchen. The kitchen, laundry and its dependencies are well arranged for light,

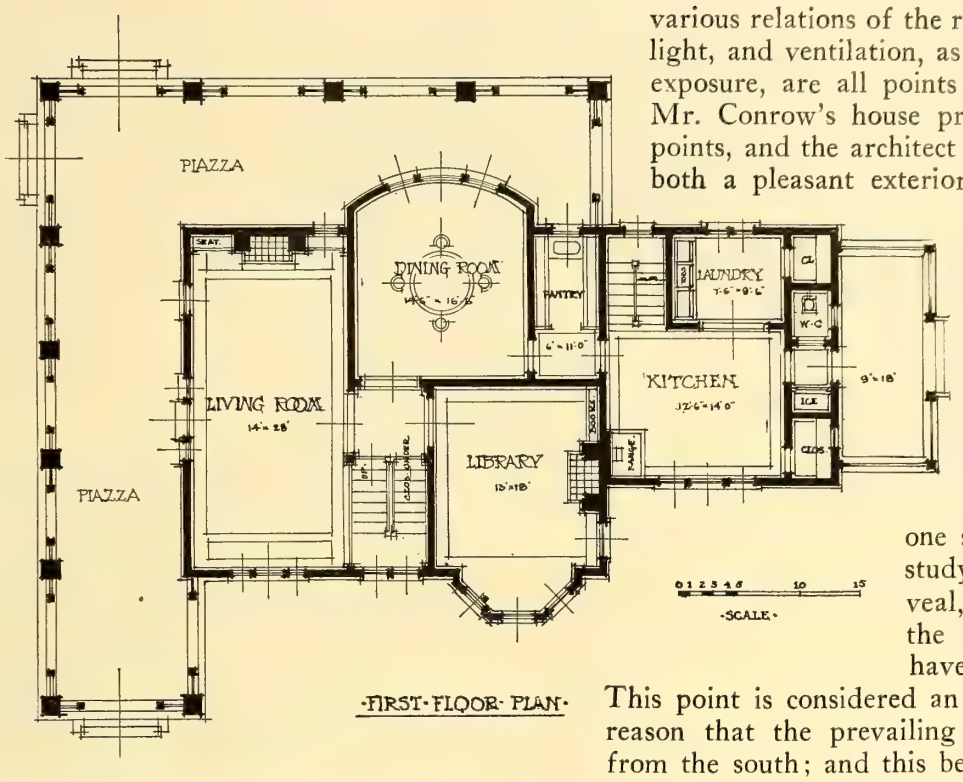
ventilation and appointments.

The second floor is finished with a natural trim and tinted walls. This floor contains five bedrooms and two bathrooms. The bathrooms are within easy access of the bedroom, and are furnished with porcelain fixtures and exposed nickelplated plumbing. The owner's suite has an open fireplace and a dressing-room.

The servants' bedrooms are furnished in the third floor. Heating apparatus, fuel rooms and cold storage room are placed in the cellar.

The house of Mr. Conrow's has varied features of interest, and it is the expression of what was required by the owner and his family, which was very well and carefully carried out by the architect, Mr. Embury, who designed the house; and on no occasion did this dwelling fail in its planning nor lose interest to the designer, and the whole is the happy result of a careful carrying out of what the owner really wanted in the way of a summer house.

It frequently occurs when an architect designs a house for a client that he gives his attention and spends his time in designing an exterior which will contain such features that are pleasing and attractive to the eye, and losing sight of the fact that in reality the most important feature of a house is the interior arrangement; the connection of one room with another, the whole general scheme of convenience for the

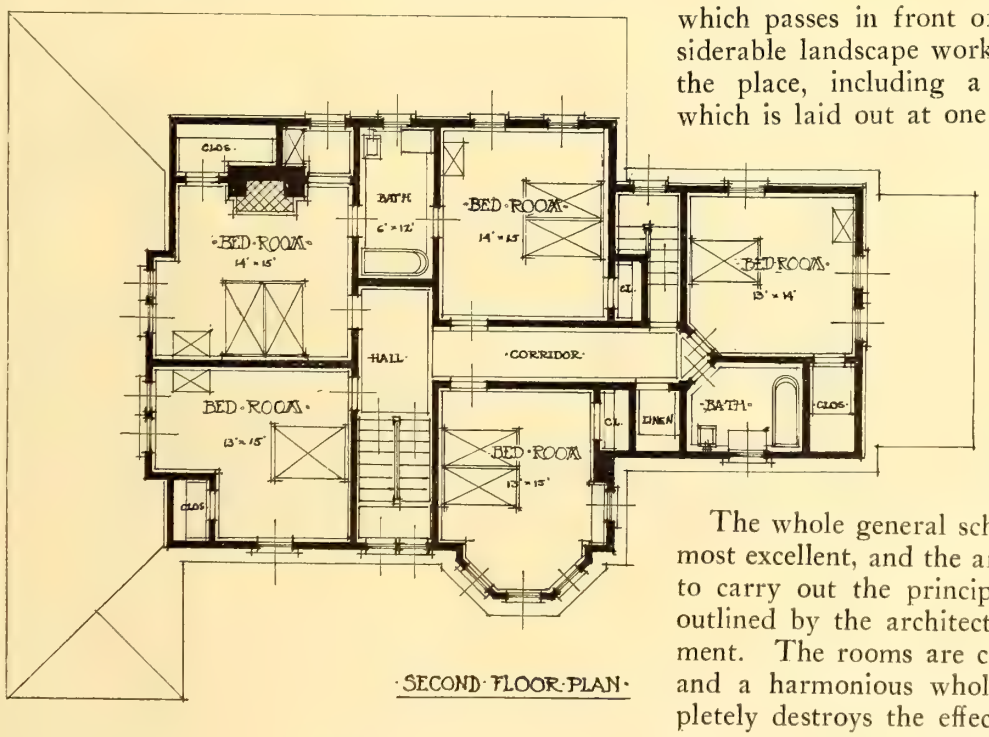


FIRST FLOOR PLAN

various relations of the rooms to each other, for light, and ventilation, as well as for the proper exposure, are all points to be well considered. Mr. Conrow's house presents all these salient points, and the architect has been able to secure both a pleasant exterior and a well arranged plan. The house, as already stated, was built for a summer home, consequently it was deemed best to face it with its front toward the southwest, while its rear faced the northeast. By placing the living-rooms on one side of the house, as a study of the plans will reveal, it will be found that the principal living-rooms have a Southern exposure. This point is considered an important one for the reason that the prevailing winds in summer are from the south; and this being the case it is to be naturally supposed that the planning and the placing of a house as outlined has an advantage over one built in the reversed position.

The piazza piers of concrete inclose trellis screens and arches

The grounds about the estate have been well developed. There is a sweeping driveway which swings in from the road to the side of the house and then to the stable beyond. Another entrance is made direct to the house from a walk which extends in from the road, which passes in front of the property. Considerable landscape work has been done about the place, including a semi-formal garden, which is laid out at one side of the property, and with a view from the living-room of the house, and also from the piazza, which is really the living-room in summer. These vistas are most attractive and add much to the pleasure of country life.



SECOND FLOOR PLAN

The whole general scheme of the interior is most excellent, and the artistic furnishings help to carry out the principles of decorations as outlined by the architect in his interior treatment. The rooms are complete in themselves and a harmonious whole. Nothing so completely destroys the effect of a room so much

The stairs and living-room

as the introduction of a gaudy, conspicuous, unartistic object which has no right place in a well designed and artistically arranged home.

It is not the question of money in the furnishing of an artistic house, but the wealth of good taste which we may have in selecting the proper color scheme and the necessary objects of furniture and decoration; for anyone with good taste can accomplish very much more in household decoration than one who simply has money to spend. The stable and garage are built at one end of the estate, from which a road leads to the street direct, and indirectly to the house and then to the street. The stable is thoroughly equipped with all the necessary features. It has a large carriage room and a stable to accommodate three horses. The stalls are fitted up with ornamental iron trimmings, and are supplied with patent feed chutes.

The carriage room is fitted with harness closets inclosed with glass doors. The walls and ceilings are ceiled with North Carolina pine, stained and finished with forest-green effect.

The second story contains the coachman's quarters and ample storage room for feed. The garage is built so as to be connected with the stable, but it has a separate entrance. It is fitted with a workbench.

The library with its built-in bookcases

What Colonial Architecture Really Is

By C. Howard Walker

THE term Colonial architecture is applied, as its name indicates, to the architecture of the English Colonies in America before the Revolution, and to the buildings which are based upon the same factors of design in the period when the young republic began to erect town halls, State capitols and other buildings, both for civic uses and for private individuals, after the depression caused by the war. Recent buildings of the latter part of the nineteenth century have also been termed Colonial, whenever any factors of the types mentioned have been incorporated in their design. The difference between the modern Colonial imitation and its prototype varies in each and every example, and justification for the variations is assumed because of the fact that there were different types of architectural design in Colonial times.

For example, the buildings of Virginia had individual characteristics which were absent in those of New England, and the latter did not entirely resemble those of Pennsylvania or of Western New York. But there were common factors in all the actual Colonial work which much of the modern work sees fit to ignore or violate. The English architecture, which is the parent of the Colonial architecture in America, was the outcome of the Classic revival in England under Sir Christopher Wren. It was strongly influenced by Wren's travels in Italy and his study of Italian palaces, and was, in fact, an adaptation of Italian work to English requirements and conditions.

A fine Colonial doorway, "Harwood," Annapolis

The classical factors which are associated with Colonial architecture are as follows: First, the general proportion of height and width of facades. The tendency is that of long, low facades, and few buildings have the thorough Colonial quality which are higher than they are wide. This does not apply to church towers or spires or to porticoes, but to facades only.

Second, the strong regard for symmetry upon either side of a central axis. It will be found by comparison of the actual Colonial buildings and their modern imitations that the character of dignity is given to the earlier type by the accent of the central motive and the absolutely simple symmetry upon either side of it. In many cases, such as the less pretentious houses in the smaller streets of Portsmouth, Salem, Newburyport, Newport, Germantown and Newcastle, Delaware, there is little more than a dignified doorway, flanked by a well proportioned, symmetrical facade. Even the cornice is unornamented. Yet these houses are thoroughly Colonial, and have much better scale and greater charm than facades with various orders of architecture used as ornament and with garlanded friezes and oval windows. This formal symmetry was the direct outcome of derivation from Italian palaces through English country houses and affected the plan, creating the central hall with rooms of equal size on either side and single windows at regular intervals rather than the grouped windows of the mullioned types.

Third, the designing of openings, whether doors or windows, higher than they were wide, this applying even to the Palladian motive, i. e., the larger central arched opening flanked by narrow squareheaded openings carried only to the spring of the arch. The use of vertical rectangles as openings in a horizontal rectangle as a facade is characteristic of Colonial design. It is, therefore, evident that buildings which may in all other respects conform to Colonial details lose at once some of the fundamental character of the style if they are without symmetry and if they have openings larger horizontally than vertically.

In city houses in which it is necessary to place the entrance upon one side, the details alone preserve the style, and in grouped openings, as in shop fronts, etc., where the horizontal measure of the openings is wider than the vertical, the window is strongly subdivided by mullions creating a series of vertical rectangles. The next attribute of proportions in Colonial buildings is the gradual diminution of heights of openings in successive stories, in the usual dwelling. There are naturally types of building in which the principal rooms are upon the second or other floors than the first, and which have larger openings than those on the ground floor, but in the majority of dwellings the openings decrease in height above the first floor.

The window openings under the eaves or cornice are often square and in some cases are broader than they are high, and are the exception to the usual vertical rectangles. But this is in most cases occasioned by a desire to keep as far as possible the proportion of an architectural order in the facade, these attic windows being in the frieze and corresponding somewhat to the metopes of the Doric order. The work, as has been shown, was developed from stone architecture, and while the simpler buildings confine detail to the portal and the cornice, the more elaborate examples have the corners of the building treated with quoins and pilasters. The quoins merely indicate stone corners, but the pilasters are often designed with high pedestals and carry an entire entablature, all of which is carefully proportioned according to the canons of the orders of architecture.

This is quite in accord with sixteenth century Renaissance design. In many cases, as has been mentioned, the attic windows are in the frieze of the entablature, and count merely as spots in the frieze, and are sometimes either circular in form, or are horizontal ovals. Vertical ovals are not used for the attic windows, and in fact are rare, occasionally, however, being found on either side of a doorway or important opening. Buildings, therefore, which employ order

Interesting example of dissymmetrical design using Colonial motifs and detail

"Homewood," one of the finest examples of Colonial architecture in this country

"Homewood," the steps are su

"Shirley" is a good example of a difficult problem, with its many windows treated without affectation

Excellent desig

nted with a classic portico

Well proportioned in main masses; Palladian motifs too low and small; balconies too heavy over-projection

Excellent monumental design, with somewhat too many garlands

oughout

"Westover," excellent, well proportioned and well detailed

Interesting example of dissymmetrical design using Colonial motifs and detail

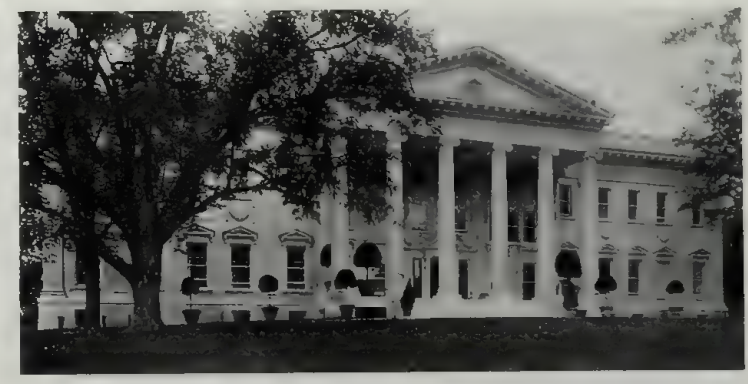
"Homewood," one of the finest examples of Colonial architecture in this country

"Shirley" is a good example of a difficult problem, with its many windows treated without affectation

"Homewood," the steps are surmounted with a classic portico

Excellent design throughout

Well proportioned in main masses; Palladian motifs too low and small; balconies too heavy over-projection



Excellent monumental design, with somewhat too many garlands

"Westover," excellent, well proportioned and well detailed

above order in a facade have not a marked Colonial character, and the accidental and occasional use of an oval opening is quite at variance with actual Colonial work, which is especially noted for its formality. The openings are placed over each other and with tops and sills on the same horizontal line, occasional and accidental openings being carefully avoided. So much is this the case that it is not unusual to find staircases crossing openings, in fact the design of the exterior is never sacrificed to minor details of the interior, though it thoroughly announces major details. This fact has been little appreciated in modern Colonial work, in which all sorts of incidental interior details are indicated on the outside, such as small windows for bathrooms and china closets, staircase windows following the run of the stairs, and other disturbing factors. In planning in the Colonial style there must be constant give and take between the plan and the exterior, the partitions being adjusted so that the windows may be arranged upon regular intervals, the interior details being accommodated to the openings, and the openings themselves being arranged relatively to the essentials of the plan, but sacrificing nothing to the incidentals.

Palladian motif in wrong position; dormer roofs too steep

There is nothing that so destroys all quality of simplicity and dignity in Colonial architecture as a lack of discrimination between broad, simple proportions and petty detail. The preceding remarks have applied to the mass of the building and its openings. The roof must necessarily be proportioned to the mass. It can be flat, pitched with hips, with or without a deck, or with gables, but requires symmetry at either end of the roof. Of the pitched roofs there are three distinct types, i. e., the gambrel roofs with gables at ends, the hopper or hipped roofs, seldom more than of forty-five degrees pitch, having a ridge; and the hopper roofs with decks. An occasional hopper roof occurs which is penetrated by an attic story at the usual line of the deck, but this is occasioned by special requirements and is not attractive. The flat roofs and deck roofs have often a balustrade. All the pitched roofs can have dormers, but it is to be noted that in the actual Colonial work the dormers are narrow and small. There have been no more abused factors of Colonial architecture in modern work than the dormers, which have been made wide, often with grouped instead of single openings and with little discrimination in regard to their position upon the roof. It is not necessary that they should be upon the axis of the wall openings below, but they should be placed symmetrically upon either side of the central axis and should be kept away from the hips. Occasionally a vertical wall is built between the dormers, giving additional space in the rooms, but this rarely occurs excepting in modern work.

A well designed house with few errors

Next in importance are porticoes and porches. In the early examples columns were single and arranged with regular intercolumniation. The doubling of the columns at the ends of the portico to the Boston State House was considered a distinct innovation. Whether the order of architecture was carried through more than one story or not was entirely a matter of the monumental character desired, but in very few cases were there two distinct orders of widely different scale used. The widening of the intercolumniation between the center columns of a portico was resorted to at times, but disturbed the simplicity of the facade, and the expedient of placing columns close to supporting pilasters at either end of an opening so frequent in modern work, only occurs in a few minor and unimportant instances. The projection of the porticoes was less than the intercolumniations. The ordinary practise of to-day in designing so-called Colonial porches and porticoes is to not only project them more than the distance between the columns, but to double and even to treble the columns at the corners and to associate columns with square attenuated piers. The result is very confusing in proportions and shadows, but the worst solecism committed is where porticoes have no pilasters at the house wall, where the entablature apparently penetrates the building, or is carried by an entirely uncolonial bracket. The treatment of entrances has offended less in modern work, the use of high, narrow side lights with or without the fan light over the door apparently offering less opportunity for peculiar variations. It is not unusual, however, to find the side lights too wide and the fan light with an unpleasant curve. The so-called three-centered arch is responsible in most cases for the latter fault, an elliptical arch being much better.

Full of errors and incongruities

Contains many unnecessary features

Dormers too broad; pediment too steep; frieze too narrow; architrave too broad

Too much porch for width of house; Palladian motif too low and small; dormer pediments too heavy

Exhibits few real Colonial features

Portico too heavy; attic window incongruous

A marked characteristic of Colonial architecture is the absence of bow windows, which were factors of styles of less formality in design. In modern work, in which these windows are often essential to the plan, they should be considered as major exterior factors, should be arranged to balance symmetrically on either side of the central axis, and should receive the same dignity of treatment as the porticoes. At best they are distinct interpolations in the style. The Palladian motive, i. e., an arched opening flanked by two narrower square-headed openings, carried only to the spring of the arch, is one of the most pronounced motives of Colonial design. It is an important motive, and for use in two ways only, either upon the main axis or in case of announcing a large room or hall, in regular repeats, usually in threes, fives or sevens, i. e., uneven numbers. It should never be squat, that is, the united width of the three openings should not exceed the height to the spring of the arch. In modern work it is frequently placed off axis and unrelated to any of the other openings. It is a distinct advantage in Colonial work to arrange the chimneys symmetrically, and while this is often impossible, those penetrating each roof should at least be carried to the same height.

The balustrades are of several varieties, some quite heavy, simulating stone balustrades, which type should be used upon terraces and near the ground.

The balustrades grow, relatively, lighter toward the top of the building. Others are made up of slender, turned balusters, which should not be over their own diameters apart. Still others are of an open character of straight or curved diagonals within horizontal rectangles, the thin edge of the sections across the direction of the balustrade; these latter are very light in appearance. It not infrequently happens that the height of the balustrade is disproportionate to the entablature below, and seems too high because of the number of vertical balusters, while, if it be lowered, the corner posts lack accent.

Because of this fact two expedients have been adopted, one of placing terminal vase forms on the corner and division posts, the other of carrying these posts higher than the balustrade rail and ramping the rail upward at the posts. The latter expedient is rare in early exterior work, though used upon interior staircases. Both expedients have been grossly exaggerated in modern work. There is nothing that so vulgarizes a balustrade as excessively high or large ramps at the posts. The turned balusters should be square in plan at both ends. A Colonial design of wood should have an adequate water table, and if corner pilasters are used the water table needs projection, even if a shelf occurs in consequence. The base line of any classic building requires to be announced. The usual object of belt courses is to create long horizontal lines lowering the effect of the design. They are more effective by their shadows than by their width, and are often too broad in modern work.

The same fault occurs in entablatures. There are many admirable Colonial buildings in which the architrave and frieze are entirely omitted, the bedmold and cornice alone being sufficient for the delicacy of the style. There is no more common fault in modern work than the exaggeration of the frieze and its over-elaboration. Manifestly an architrave over a wall does not require the depth of one over an opening. In the cases where the attic story becomes the frieze, the architrave becomes a belt course below the attic windows and the frieze is of the same tone and color as the wall below.

The cornice is developed from any of the orders of architecture, and its bedmold may have beam ends, modillions, etc., or not, at will. There is also a type of delicate cove used which is often lunetted and made into a bracket course. Heavy Florentine bracketed beams and corbel courses are not sufficiently delicate for the style, though used in modern work. The window and door trims should be narrow rather than wide; they may have a cap molding, and, if desired, be pedimented with low triangular or arched pediments, broken or unbroken, but these are easily overdone, and are best over axial motives and over the dormers. The broken pediments of the Colonial style are extremely rich in light and shade, and become spotty and irritating if used in excess.

The subdivisions of the sash have occasioned as much difficulty as any factor of the style. The style being a delicate one, it does not brook large undivided openings, and the window muntins tend to harmonize and often to create the scale of the facade. If they are omitted the whole detail should become more robust. The subdivision of sashes should be regular and alike on both sashes of each window, and should be studied for harmonious effect throughout the building. The introduction of different sized lights in the upper and lower sashes and in adjacent windows is productive of confusion of scale. Diagonal lights are entirely out of character with the style. The sections of the moldings vary with the quality of the types, some being fine and delicate, others broad and robust, but the same character should be kept throughout the design. It is not unusual in modern work to see delicate entrances associated with heavy cornices, or vice versa, creating confusion in the scale of the building. Another important factor is that of keeping the grouped moldings with the same facial angles, i. e., if they are based upon lines of forty-five degrees, that angle should be dominant throughout the sections. The general tendency of the proportion of rooms or factors in plan is of forms having length, the rooms are not square or circular, but have length and are oval in plan, and there is the same tendency in the porch plan. It is seldom successful if planned upon a portion of a circle, and is much better when based upon portions of an oval. Long subtle curves in arches and in plan are more characteristic of the style than are semicircles, with the exception of the use of circular-headed windows in important places.

Colonial interior detail is often more elaborate than exterior. The mantels are carved and decorated with garlands and medallions, the surfaces are fluted with both convex and concave flutes, and there is the constant occurrences of oval panels filled with the sunburst pattern of radiating flutes.

The principal characteristics of the style are those of dignity, formality, simplicity of arrangement, delicacy of details, and subtlety of proportions and uniform scale. The faults evident in the imitations of the style are picturesqueness of conception, complexity of arrangement, coarseness of detail, and disregard for scale, and these faults are most evident in the following factors of the design: First, in the use of orders of widely different character and scale. Second, in disregard of accent of axis. Third, in disregard of the placing of openings on the same horizontal lines and over each other and of their vertical character. Fourth, in the disregard of simplicity of arrangement of columns and of intercolumniation. Fifth, in the too frequent use of circular forms in plan instead of oval forms. Sixth, in the over-elaboration of detail, excess of broken pediments, etc. Seventh, in the disregard of scale in the subdivision of the windows. Eighth, in the excessive size of friezes, of keystones, and of ramps and of vases. Ninth, in the treatment of bow windows unrelated in scale to the facade, and, lastly, in the failure to recognize that Colonial exterior detail should be quite as nearly white in tone and color, while interior detail is preferably white, or gray, or tinted, but can be in natural wood of a neutral light tone and color, contrasted with dark doors, stair rails, stairs, floors and furniture. Upon the exterior it is an architecture of light tone throughout, excepting in the doors. In the interior it is often an architecture of strong contrasts of a strong dark and light. It is not improved by the use of gold, excepting in portable objects set upon it as a background.

The Mimicry of Plants

By S. Leonard Bastin

IT IS often in the very beginnings of a being's existence that the most need arises for special protective means, and it is therefore not surprising to find that quite a number of seeds are examples of mimicry. Doubtless many of these resemblances are purely accidental, but in others one can not but think that there is a real purpose in the simulation. Many seed vessels bear an astonishing likeness to beetles and other insects, one of the best known perhaps being that of the castor oil plant (Ricinus). This, although not large enough to make an effective photograph, is singularly suggestive of the widely distributed Coccinella beetles and their allies. The large seeds of the genus Chelonospermum, from the Pacific Islands, are wonderfully like some of the huge tropical Coleoptera. As Lord Avebury has pointed out, these resemblances might well benefit the plants in one of two ways. It might be an advantage for the smaller kinds of seeds to be swallowed by birds, the external coating being able to withstand the action of the digestive juices. It is not difficult to conceive that a large number of seeds mimicking beetles in appearance must be eaten by birds, under the impression that the morsel is a succulent insect. On the other hand, the big seeds, such as those of Chelonospermum, might escape unwelcome attention by their likeness to insects. Graminivorous birds, which would tear the seeds in pieces and destroy them, mistaking the vessels for formidable beetles, would avoid tackling them, and thus they would remain untouched.

Some species of Iris are called "roast beef" plants from the odor they emit

Some of the most amazing plants in the world are certainly those to be numbered among the South African Mesembryanthemums. If there is nothing in the theory of protective resemblance as applied to plants, these quite defy all explanation. Glance at the accompanying photograph of a potted specimen of Mesembryanthemum truncatum. It is absolutely impossible to distinguish between the succulent shoots which form the plant and the pebbles surrounding it. The very coloring of this strange specimen is devised so as to further the illusion. In another species, although it does not make quite so striking a photograph, the resemblance is none the less remarkable in the living plant. It is necessary to consider the conditions under which these strange plants live to find a satisfactory reason for this simulation of rock and stone. Perhaps there are no two regions in the world so much alike as the desert lands of South Africa and those of New Mexico and Arizona. In both these districts vegetation can only exist by special modifications of growth; these usually take the form of a reduction or total abandonment of foliage and evolution of thick, fleshy stems. Now succulent plants, storing up a quantity of sweet juice for their own consumption, are always liable to the attack of parched and thirsty animals in a dry country. The American Cacti are armed with terrific arrays of thorns, but the African Mesembryanthemums have a stranger, but quite as effective, mode of protection. These ingenious plants simply rely on not being seen at all, and it is likely that in their extraordinary simulation of environment there is a security upon which it would not be easy to improve.

It is very important on occasion that certain plants should be able to advertise their presence. Somehow or other a vast number of species have become more or less entirely dependent upon the good offices of insects to assist them in their scheme of fertilization. Of course, the insect goes to the flower solely for what he can get, or imagines he will find there. The great thing from the plant's point of view is to induce the visitor to pay his call. To this end it is proved that some plants in their flowers aim at a definite simulation of carrion-matter which is calculated to attract hordes of

The dragon Arum, a huge crimson flower with a scent of decaying meat

An orchid resembling a moth. The Catasetum from South America

The Aristolochias is strongly suggestive of decaying meat

insects. The well-known dragon arum is a case in point. This plant, a native of Southern Europe, and an easy subject for the garden, produces giant flowers, typical of its kind. These are colored on the inside of the spathe with a most lurid crimson, very suggestive of decaying meat. Moreover, the shining black spadix rising from the center of the bloom adds yet further to the striking appearance of the plant. Just as the spathe develops, a most disagreeable odor is emitted, strangely suggestive of rotting flesh. So genuine is this illusion that the writer knows of actual cases in which the plant has been banished from the garden simply because the owner could not endure the unpleasant scent. To the insect world the suggestion is no less deceiving, for large numbers of flies are attracted to the flower in the hope that they may be able to feast on the carrion. By an ingenious arrangement many of them are entrapped for a while, and held captive until they have become well dusted with pollen.

Beetle-Ski seeds: Chelonospermum, from Pacific Islands

There are perhaps few more wonderful flowers in the world than those produced by the South American Aristolochias; these are so huge as to represent almost the largest blooms in the world. Many of the species are authoritatively stated to lure insects by means of the resemblance which they bear to carrion. In particular A. gigas is strongly suggestive of decaying meat, while when the blooms are in perfect condition they send out an odor so unpleasant that it is difficult to stay in a hothouse with them without discomfort. Another species of the same genus, A. tricaudata, is of deep purple in the tinting of its flowers, while each blossom has three long appendages, giving the appearance of the drippings which might arise from a piece of meat suspended in the air. All these Aristolochias are visited by large numbers of flies, on whose agency the plants largely depend for the cross-fertilization of their organs.

The above examples are extreme instances of the simulation of carrion by flowers, but there are a very large number of plants which produce blossoms smelling suggestively of rotten meat. Some species of Iris, although they can not be said to resemble carrion in their appearance, are certainly very strange in their odor. One of these, common in Europe, has been given the name of "roast beef" plant on account of its scent, which is said to resemble that of cooked meat. Most people would feel, however, that that flower scarcely smells of anything so wholesome. As a general rule it will be found that the majority of brown or luridly colored flowers give off an odor which is not pleasant to human beings, although it must prove very attractive to flies.

A particular phase of plant simulation which has never been satisfactorily explained is that which is quite common among orchids. In these cases the whole appearance of the flower is suggestive of some insect—to quite a remarkable degree in some instances. It does not seem easy to suggest any real purpose that could be served by this resemblance, and yet one can scarcely think it to be accidental. Probably one of the most curious examples is the bee orchis (Orchis apifera), a native of Europe. Anyone who knew of this orchid, and came across it for the first time, would have small difficulty in at once recognizing it. The labellum is of a velvety brown variegated with yellow, while the two lateral petals might very well serve for the wings of the insect.

Nearly related is the fly orchis, a most singular plant in the peculiar form of its flowers. These are somewhat small, and in the center of the lip there is a small bluish spot, like the body of a fly; the two lateral petals are very slender and curiously like the antennæ of an insect. The whole illusion is very complete, and a casual glance suggests that a few flies are hanging on to the stem of some plant which has cast its flowers. Of course, among the exotic orchids there are many which by their strange shapes suggest some insect or other. The New World Catasetums are very curious in this respect, and a picture of a spray of bloom which is reproduced very much resembles a number of moths with partly closed wings. Other instances might be cited in the orchid family of this kind of simulation, and it would be a very easy matter to fill pages with descriptions of these weird flowers.

Of course it is freely admitted that in these similarities shown by orchid flowers there may be nothing of any meaning; in the way that they appear to us the likenesses may serve no end at all. Nevertheless it is rather significant that there should be so many cases of this nature to be found in one tribe. It has been hinted that perhaps the special insects which the orchids mimic are not desired to visit the flowers. Any call is discouraged, by making it appear to passing insects that the bloom has a visitor already. This certainly seems to be rather a far-fetched theory, but it is really impossible to say that such a state of affairs might not have been brought about by means of natural selection.

Mesembryanthemns truncatum, from South African deserts

Stone mimicry: Mesembryanthemum, from South Africa

The Residence of Atherton Clark, Esq. Newton, Massachusetts

By Paul Thurston

The main entrance to the house

An Exceptional House Built of Harvard Brick Laid with Flemish Bond

AN EXCEPTIONAL house is the brick one built for Atherton Clark, at Newton, Mass., from the plans of Fehmer & Page, of Boston, Mass. The design is finely executed, and being built of brick, the architects have found their expression in square lines which are sufficiently broken by piercing the main walls with an imposing doorway at the front entrance and numerous small lighted windows on either side. The bay-window built at the side and covered with the overhanging roof, and the massive chimney built at the front of the house, are in themselves architectural features which lend necessary character to the general effect.

The main walls are built of red brick laid in white mortar with a Flemish bond. The main roof is covered with white cedar shingles, which are left to weather finish. The trimmings are painted white. The porch and the terrace at the rear of the house faces the garden, which is built at the end of the estate and forms a very attractive feature. The entrance to the house is through a broad door with a solid panel, on which is hung an antique knocker.

The rear of the house overlooking the garden

The hall is finished with a white painted trim, while the walls are covered with a wall covering of a gray tone paper on which is a large yellow figure on a floral design. The windows have gray silk curtains hung over softer ones of muslin. The floor covering is in crimson, and adds a touch of color to the soft gray tones of the rest of the color scheme. The stairs are also painted white and are covered with a similar crimson carpet. The stairs have a mahogany rail.

The reception-room is to the left of the entrance, and is finished with a gray painted trim. The walls are covered with a two-tone striped wall paper in green with large crimson roses. The floor is covered with a rug in a two-tone green, and the upholstery is in a two-tone of apple green. The curtains at the door openings and windows are also of two-tone green brocade.

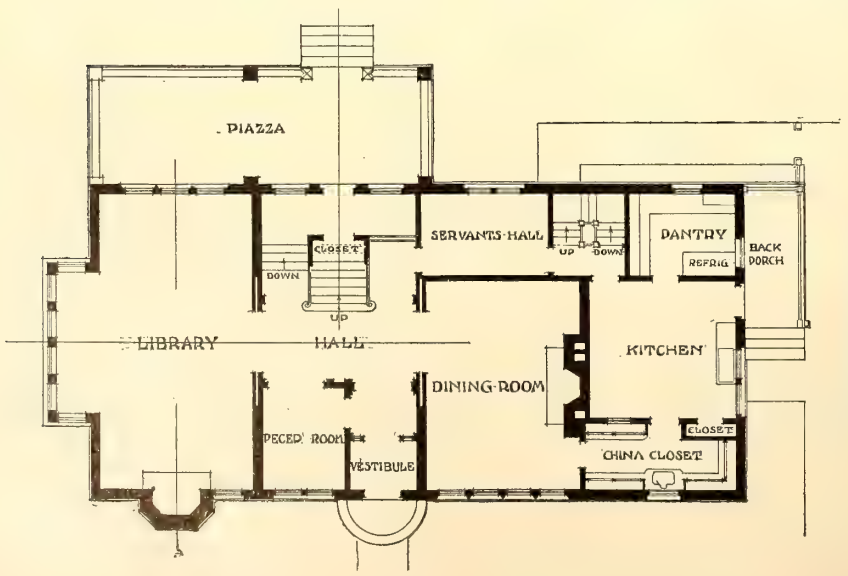
The living-room is at the extreme end of the house, and extends the entire depth of it. It is finished in the English style, with an oak trim stained and finished with a Flemish brown. The walls are covered with a Japanese grass cloth of a golden-brown color. At one end of the room is the open fireplace, built of red

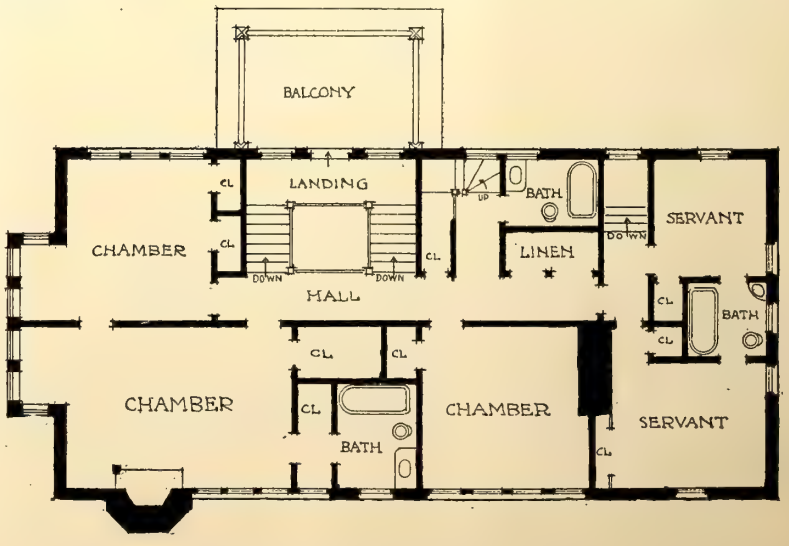
The chimney is an architectural feature

brick laid with only the heads exposed to view. These bricks are laid with red mortar, and form the facing of the fireplace, above which the mantelshelf is built. A paneled overmantel is placed over the shelf, in fact the entire end of the side of the room is paneled except the window at the left side of the fireplace. The floor is covered with a two-tone brown carpet, and the upholstery and silk curtains at the windows are also of a soft brown color.

The dining-room is finished in the English style. The woodwork is of oak and is stained and finished in a dark brown color. The fireplace has a hearth and facing of red brick laid in white mortar. The overmantel is Gothic in feeling, and is formed with a group of panels. At either end of the chimney-breast are pilasters which support the beams which pass over the ceiling and

Flower boxes, filled with growing plants and shrubs, are built on the balcony rail





The dining-room is trimmed with oak finished in a dark brown color

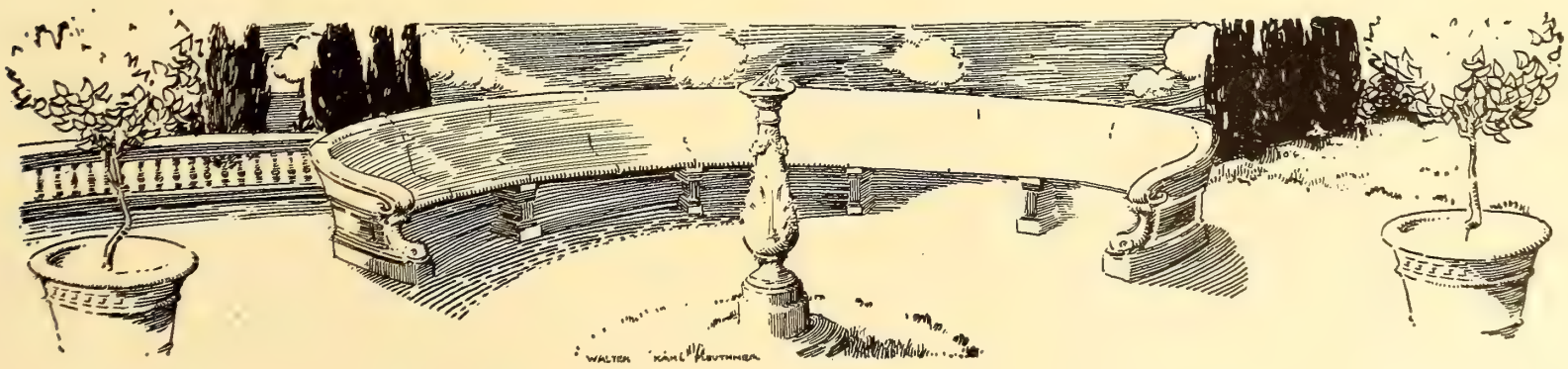
meet other pilasters which are placed at the opposite side of the room. The walls are covered with a two-toned wall paper in an Indian red. The furniture is made to match the woodwork, and the chairs are covered with a similar tone of Indian red leather. The rug is of red with a blue border. Broad French windows are built at the opposite end of the room from the fireplace, which open out on the porch and terrace and form easy access to the porch and the garden.

The kitchen and its dependencies are finished with yellow pine trim in its natural state, and are furnished with all the best modern improvements.

The second story is divided into sleeping-rooms and baths. The owner's suite, consisting of two rooms and bath, is treated with a green color scheme. There is also one guest room and bathroom on this floor, besides two servants' bedrooms and bath, which are placed over the kitchen end of the house and are provided with a private stairway to the service part of the house. The bathrooms are fitted with white enameled wainscotings and are furnished with porcelain fixtures and exposed nickel-plated plumbing. The third floor is devoted to the extra guest room and bath, and also storage room and trunk room.

The house, which is beautifully situated on a site facing a broad avenue lined with magnificent trees, is reached from the roadway by a broad walk built of red brick laid in herring-bone fashion, and extending direct to the front entrance. The grounds surrounding the site are well planted with trees, which with their overhanging branches form an attractive setting for the house, for the landscape at once determines the general style and character of the house. This is a point which is quite essential to the well being of a house from an architectural standpoint, and it is a fundamental truth that is very excellently illustrated in this particular house. The simplicity of the house, both as to its exterior design as well as to its interior scheme, is wherein the true elegance of the modern home is to be found. The grounds surrounding the house are planted in a semi-formal manner.

The living-room is treated with a golden-brown tone throughout



Colored Windows in the House

THERE are in every shop pattern books filled with designs of the conventional kind, which, however handsome they may be, have become hackneyed to a degree by repeated use; but even when an old and much used geometric pattern is found to be most available, a certain degree of artistic effect can be produced by drawing the lines on the working drawing "free hand," thus lessening the machine-made look and the rigidity of a drawing accurately executed with draughting instruments. It can almost be made to have the charm of a pencil sketch when compared with a hard linear design.

The simplest leaded windows are those with small square or diamond shaped panes, but even these can be made a test of taste and feeling for proportion. Good specimens of the so-called square pane are shown in the paintings of interiors of many Dutch artists, and examples of the diamond shaped windows will be found in drawings of old English manor houses. In both of these styles of windows a note of color is frequently used, and used in the best of taste.

If possible, however, something individual and personal in design should be sought for and the tendency among the most exacting and discriminating is happily now in this direction. Just where to place leaded windows is, of course, a problem differing with every design of house. In many the staircase landing offers an excellent opportunity, but whatever is placed there, whether geometric, ornamental, floral, landscape or figure, should be most carefully considered, as the color scheme governs that of the hall and is about the first thing seen by the visitor on entering the house.

Transoms of doors and the side lights should be very quiet and very simple, as they form part of the architectural scheme. The light in the door panel can appropriately be made as elaborate and complicated as the owner's purse admits. Crinkled glass is not to be recommended here, as the light from it is too vivid and startling. Something quiet in texture of a creamy tint is much to be preferred. The soft radiance of glass of this character enhances the value of all objects in the entrance hall and harshness of shadow is avoided.

In the library the subject is of paramount importance and a great range of motives exist from which selection can be made; book marks, printers' devices, emblems of the crafts relating to book making, printing and illustrating, seals of great libraries and universities, etc. Especial care must be taken here not to destroy the light needed for reading purposes.

Perhaps the ideal conditions for beauty of effect and for use would be a room in which the reader faced a colored window, throwing no glare, low and quiet in tone and restful to the eye, having at his back a window filled with light creamy glass, harmonious in design, which would furnish the needed light.

In simple windows for simple homes, glass of an almost uniform tone is to be preferred; and the color accents, if any are used, should be selected with the greatest care, and should seldom be vivid unless a coat of arms or a device of some kind is used as a spot of color.

The question of just how much light is to be transmitted is of paramount importance in the selection of clear glasses, or of those with a certain resistance to the free flow of light. In the latter class our opalescent glass offers a great range of light colors and shades of mellow tints of real beauty.

A specimen of Mamillaria rhodantha

A SPECIMEN OF

Mamillaria Rhodantha

THE accompanying illustration shows an uncommon form of the cactus "Mamillaria rhodantha." Whether it is a "sport" or a new variety is most difficult to determine, for authorities are not at all clear as to how the many varieties exhibited by this species should be classified. The more usual specimens of this plant are columnar aggregations of nodules, carrying from five to twelve spines. The spherical bodies upon the upper boundary of the illustrated plant are units, and give some idea of the common appearance of this cactus. By the coalescence of a number of these spherical units the peculiar "crested" appearance shown in the central and lower portion of the growth is obtained.

The Dining-Room

By John A. Gade

THE dining-room is the only room in a dwelling house which is only used for a single purpose and at stated times. The problems thus involved by its construction, its position and its relation, become special and definite ones. All the other rooms lived in by the household in common have varied uses and dependencies. The library and the study, or den, are read in, are used for after-dinner smoking, for writing, or for the transaction of business relating to the house. The very name of the living-room has become ambiguous from the fact of its varied usage. It may be a parlor, a general assembly room for the family or guests at all hours of the day, used for music, cards, sewing or conversation. And the hall is now likewise, and especially in country houses, designed and furnished for the use of general lounging and living, while its purpose as an intermediary stage between in and out doors and its staircase leading to upper stories have been suppressed or altered.

The service door should be concealed behind a screen

The conditions that primarily determine the dining-room are its exclusive usage at meal time, its furnishing with the necessary furniture for the service and enjoyment of the meals, and its dependency and connection with the pantry and kitchen. The dinner is possibly the only more or less formal social occasion at which we gather. While eating, certain forms, manners and customs are observed in our demeanor toward each other and the servants. We no longer, if owners of our own castles, sit on a raised dais facing all except our social equals; the viands are no longer prepared and cut up in our presence; we do not even, as in the last century, use the dining-room throughout the evening until we finally retire under the table.

On the contrary, we employ a most elaborate and complicated service of glass, porcelain, silver, and pewter, with special articles for every imaginable purpose—we are served as rapidly and silently as is possible in a certain prescribed succession of courses. The meal, at least the principal one, has become a social as well as a formal function.

The serving of the meal and the furniture of the dining-room determine at the outset its shape. We have in general a table, the chairs, both used and unused, the sideboard, the serving table and china cabinets, and, possibly, a screen concealing the pantry at the frequent opening and closing of its door. The size of the table invariably placed in the center of the room, considered in connection with the chairs around it (each person should be allowed from twenty-six to thirty-one inches of space), the space requisite to serve back of these, and any furniture against the side walls of the room, are what should determine its dimensions. If the table is of the usual dimensions, four feet nine inches or five feet square or round, one foot eight inches should be allowed around it for chairs, two feet more for serving, and from two feet two inches to three feet for furniture. Basing the dimensions of the room upon these figures, and the fact that the three feet allowance for furniture will probably be requisite on only two adjacent sides of the room, no side of the room should be less than fifteen feet. These are liberal dimensions, but it should be clearly borne in mind that nowhere is comfort more imperative than in a dining-room. The servant must not be obliged to draw in her breath to pass back of the diners' chairs, nor must the allotted space be so small that furniture and walls are knocked when the chairs are pushed back, and, in case of a dinner party, guests be obliged to sit glued together. The dining-room should be more nearly square than any other room of the house, as it gathers round the one regular piece of furniture, the table, or focus, equal space is requisite all around it for serving, and the room is never, as is a living-room, or library, or hall, broken up into "groups" by furniture or inmates.

There should further be kept in mind the position of the fireplace and the extension of the table. The proper heating is naturally a very vital question. You can not heat a dining-room as you would one of the other living-rooms, where the occupants are at liberty freely to move nearer or further away from the source of heat. At the same time that the dining-room ought not, as is frequently the case, to be so cold that low-necked ladies shiver until they are obliged to send for shawls and wraps, it should be cool in comparison with the parlor or library. During meal time, by the consumption of food (and especially wines), as well as by the

Dining-room with tapestry panels

burning of the candles, gas, etc., the temperature of room and diners constantly rises. Further, nothing is more uncomfortable than to have one's back during the meal too near the logs. A few feet on the safe side should thus always be allowed in front of the chimney-breast (which itself will probably project). As the fire should never be nearer to a diner than six feet, the builder must remember that a five foot table is at times extended to nine feet, and the length of the room parallel with the lines on which the extension will occur must be figured in reference to the greatest probable length of the table. A well proportioned dining-room may be said to be one of about twenty feet by twenty-two feet by ten feet six inches high.

The furniture, or what takes its place, may also be "recessed," and the room made correspondingly smaller. Thus the sideboard, which encroaches so decidedly upon the floor space, may be placed in a recess or an alcove, and the china cabinet made into cupboards or closets built into the walls with their glass doors coming flush with the wall surfaces. The same expedient, if followed in the fireplace, building its breast flush with the wall and constructing the flue on the pantry rather than on the dining-room side, is of great value in enlarging the room.

Nowhere does furniture govern as much as in this room, and in small country houses as well as in modest city houses, the building of the requisite compartments for china, silver and glass into the walls becomes of the greatest assistance in enlarging the available floor space. The doors furnished with leaded or wooden muntined designs, perhaps in connection with plate or pewter shelves running around the side walls, may likewise add to a simple but happy effect.

Light, sunshine, cleanliness and air are all essentials in this room. A close, dark or stuffy dining-room is insupportable. The morning sunshine falling across the white cloth of the table is better than any cereal or fruit to start the day or the appetite. The room can not thus be more advantageously placed than in the southeast corner of the house. Its location as well as the number of windows is vital. It must be, above all others, a cool room in summer. If it is possible to procure windows on two or three sides, especially two sides facing each other, the cross current of air becomes of great advantage during the hot season. Opening the room on to a piazza, on a pleasant view of flowers, or terrace, or garden, or a cool, splashing fountain, will add immensely to its success. As

The uncarpeted floor has many advantages

Simple panels of wood have a charm of their own

air and sunshine are freely admitted, the flies, mosquitoes and insects which will be attracted in swarms by the food must not be forgotten. Windows must be constructed so as always to be provided with screens, and screen doors if the windows are French and go to the floor.

The room could not be better placed than opening on one side on a piazza, whither the table may be moved during the hottest of weather. This should be connected by a casement window running to the floor, and at least a portion enscreened. Pantry, or serving-room, and dining-room lead, of course, directly into each other—the more intimate and the less noticeable, the better and more successful the service.

There must be a decided feeling of cleanliness and lightness about the room as well as a certain restraint in its architecture. Heavy wall coverings, dark leathers or highly flowered wall papers, as well as stuffy curtains of thick velvets or plushes, are generally unfortunate in a city house and invariably so in a country residence. In addition to the "stuffy" impression they make, the heavy wall materials and curtains absorb and retain the steam and odors from the food. The old Colonial, Georgian, and Adams dining-rooms are hard to beat with their clean looking white paneled wall surfaces, with brilliantly contrasting dark mahogany furniture and brightly polished silver. They look neat, dignified and fresh. In the more elaborate or expensive schemes cement or stone may be substituted for the wood panels. Employing a wooden paneled surface or merely canvasing and painting the walls, producing perhaps the panel effect by the application of wooden molds directly on the plaster and finishing the whole with light colors of paint, is almost certain to look better than a dark or highly flowered paper. The same principle should be followed in the ceiling and floor.

Apply on the former, unless the architecture radically demands a different scheme, light ornamentation and keep the floor as clean looking as in a hospital. Do not carpet it, but furnish with a rug or matting, that may constantly be cleaned. Best of all, do not fear cold feet, but have a brightly waxed floor or one of stone or marble, or a tesselated one. In a French house a rug in the dining-room would usually be considered uncleanly—there the parquetry of the floor is generally danced on by the wax shoes of the "Frotteur" every Monday morning and shines as invitingly as the top of the table.

The doors as well as the windows are of importance. One of the doors will in almost every instance lead into one or the other of the principal rooms, generally into the living-room or the parlor, and its opening is usually large. It should never be a single door, but sufficiently wide to allow two persons to enter the room arm in arm, without any fear of grazing the jambs. This opening should never merely be portiered off from the living-room, but closed by either swinging or sliding doors—without them the smell of the food will penetrate, and one will further be obliged after the meal to listen to the clatter and disturbance inseparable from clearing off the table.

The pantry door is merely a necessity and should never be treated as an architectural feature. It should be just wide enough to allow the maid or butler to enter comfortably with the largest tray—for the smaller it is the less kitchen smell and rattle of dishes and cutlery will reach the dining-room. Conceal the door altogether if possible, not only by a screen in front of it, but by giving no trim to the door on the dining-room side and seldom making it over six feet six inches in height. There is seldom any necessity for making it correspond in height to the wide opening leading into the living-room. Unless a small transparent opening is left in the pantry door at the height of vision, there is danger where several servants are waiting on table that a tray with its contents will find its way to the floor. The bottom of the door will always be kicked by the waitress attempting, when her hands are full, to open it by her foot. The lower rail should thus never be left white or unprotected. A small brass plate about ten inches high will keep it neat looking. If the pantry door is to swing both ways, a great deal of care should be taken in the selection of the hinge on which it revolves, as the difference between a silent and a noisy one may mean the meal spent in comfort or annoyance. Also hang the door on the same side as the arm with which the waitress pushes and does not carry.

The windows, all tightly screened, should open easily, and, if of the casement type, be furnished with such hardware that they may be partially opened. In the placing of them, the furniture again becomes of importance. They are sometimes placed so near together that no space is left for a six-foot sideboard, and no wall space, conveniently near the pantry door for a serving table—or they may occupy such positions that the necessarily large sideboard and china cabinet must be relegated to the corners of the room, where they look cock-eyed instead of ornamental.

In opposition to the simplicity and light airiness of the styles which I have recommended come our elaborately finished dining-rooms of the Italian and Elizabethan styles. They are really an application of the general styles of these periods to our dining-room, for in the Renaissance and Tudor days there was no such thing as a dining-room. The entrance hall, often placed immediately in front of the reception-room, was frequently, in the earlier days of the French palaces, employed for the meals. It was not until the days of Louis XV that a special room was set aside for eating. Molière picked his chicken with Louis XIV in the latter's antechamber, and the Italian princes of the sixteenth century drank their wine wherever they were overcome by thirst.

In the French palaces the "salle des fetes" and dining-room were one and the same room, the fact of their being used for serving food being only one of their many usages. The meal was preceded by receptions and followed by music, by dancing and other performances. This was the custom both at Versailles and Fontainebleau. Likewise the banqueting halls, with their high ceilings and galleries, of the earlier days of the great English manor houses, were employed in an entirely different manner from the modern rooms where the family proper generally assembles for its meals several times a day at regular hours.

From the "dining-parlor" of the later Elizabethan period our dining-room has gradually evolved. It is interesting to note that the later Elizabethan dining-rooms, as well as the earlier French rooms, were all so treated in materials and design that they might easily be cleaned. In the English we find, at least along the lower surfaces of the walls, large surfaces of wooden paneling, and first six or seven feet above these the rough plaster and solemn rows of family portraits. In the French the paneling is delicately painted in white, grays or light greens carried all the way up to the ceiling, the broad surfaces of the paneling ornamented either with paintings of appropriate subjects like flower pieces, fruit, game, fish, etc., or the paneling itself decorated with similar applications. Mirrors are generally omitted and wisely, as even the vainest find it trying to see themselves every time they look up during the meal. The French dining-rooms of the eighteenth century, like those of the Chateau de Rambouillet and of Marie Antoinette in the Petit Trianon, are thoroughly admirable and adapted to their purpose, and even if their style and magnificence place them entirely out of consideration for the ordinary housebuilder, still they are full of excellent suggestions for the person who is desirous of weighing the problem in even the most modest manner.

The artificial lighting of the dining-room should be considered from the first. In this room, in opposition to others, diffused light is not desired, but concentrated. Side brackets may truly be used in the panels or pilasters or surfaces of the side walls, to light the room, but only in a secondary capacity. The focus is the table, and around or above or on it the light should fall. The huge metal or even crystal chandelier suspended in several tiers from the ceiling and centering as nearly as possible on the mahogany slab has luckily to a great extent passed. The hostess knows how unbecoming it is to her room, her dinner, and her guests. Placing your light directly on the table, that is, using candles, is unquestionably the most successful method of lighting — successful to the service, the table ornaments, the flowers and the women. The candles, if properly shaded, throw the light down upon the silver and porcelain, and do not obstruct the general view or reflect light directly in the faces of those surrounding.

In the lighting, as in the other problems presented by the room, the table becomes the general governing factor. Even its outline will be found to modify to a certain extent the general pleasing or inharmonious effect. A round or oval board will always, if widely extended, look best in an oval room, and the correspondence should be similar in a rectangular one. The table is the keynote of the design, as well as of the hospitality, the sociability and the intimacy of the builder.

It must be apparent, therefore, that many other things than architectural exigencies influence and determine the design of the dining-room. No room in the house is so powerfully affected by unarchitectural conditions and matters, and in no room do so many different things have determining weight. The fact is the dining-room must be begun at the beginning of the house building. Its requirements are not only somewhat exact, but they are absolutely rigid, and in no other room is a departure from the essentials attended with such disaster.

It is, therefore, quite impossible to apportion such and such space to the dining-room without a most intimate and careful study of all the conditions. One can not even definitely determine the dimensions best suited to one's own dining-room if the house is intended for prolonged occupancy. The use that may be continuous for a few years, and which may seem to be always available, may quite suddenly prove to be inadequate, and the utmost discomfort may arise from a restricted area that, in the beginning, may have seemed quite adequate.

One can not foresee such contingencies, and it may seem unreasonable to suggest them, but at least they point the value of giving as large an area as practicable to the dining-room.

A richly furnished and decorated dining-room

Bamboo in the Occident

By Ida D. Bennett

THE bamboo signifies happiness. Per se it also signifies utility. It would tax one's ingenuity to find a substitute for this versatile plant that would adequately fill its place in the domestic economy of the dweller in the Orient. It may be said to "greet the coming and to speed the parting guest," as it furnishes the first cradle or mat that receives him on his advent into the world, and is the familiar lair of his daily pilgrimage until in time he is laid away to rest in a coffin fashioned from its flexible canes.

So to the dweller in the Orient it appeals for its usefulness. But it has an artistic claim on both the denizen of the Orient and the Occident. Graceful in growth, feathery in foliage and beautiful in color, the various varieties of the bamboo are eminently adapted to the adornment of the suburban home or any large grounds. Most especially are they desirable for planting on the margins of artificial waterways, around artificial pools, in low swampy corners and wherever they can be abundantly supplied with water and sunshine.

A noble clump of Bambusa argentea

For dwellers in the tropics and the Orient they are strangely hardy, many of them standing our hard northern winters admirably. For some years I have had large clumps of them in the open ground, and while they lose more or less of their tops if left unprotected, the roots seem ironclad and have lived through the roughest weather, and I have no doubt that if properly protected the tops would prove quite hardy too.

Even when the tops winter-kill, they will make considerable new growth if given an abundance of water and a warm sunny place during the summer months. Some of the varieties—especially Bambusa metake—make excellent pot plants for drawing-room, corridor or veranda. This variety has the largest leaves of any of the bamboos and is quite as handsome as a palm. It has also the merit of growing and thriving where a palm would be utterly discouraged and lie down and die. It has also the advantage of making a more moderate growth than most other varieties of bamboos, rarely attaining a height of over eight feet and making an average growth, when pot or tub grown, of five or six. For growing in the open ground it has proven very hardy with me. Arundinaria is another variety well adapted to house culture. As B. metake is notable for the size of its leaves, so Arundinaria falcata is distinguished by the delicacy of its stems and tiny leaves. It makes a thick, graceful, fan-shaped clump and is as hardy as the more vigorous B. metake.

Among the taller growing species are B. verticillata, a handsome species, standing much cold, with handsome foliage and yellow stems; B. violescens and B. aurea, these do not stand the winters as well as the two first, but where they can be taken up and stored during winter and planted out in the spring they are very fine. Probably the most vigorous of all bamboos that are brought to this country is B. vulgaris. This variety, under favorable conditions, is said to attain a height of seventy feet in six or seven years. There

are certain grewsome tales told anent the uses criminal judges put it to—for Chinese justice is nothing if not original. It is said, then, that criminals convicted of capital offenses and condemned to die are sometimes executed by being bent over a vigorous shoot of the bamboo and left until the bamboo has grown and thrust itself through the body of the victim. It only takes a matter of two or three days, and certainly for cold-blooded fiendishness leaves little to be desired.

Certain varieties of the bamboo when young are eaten as a vegetable. The young shoots, greatly resembling asparagus, though more pointed, are said to much resemble in taste the cauliflower or cabbage. Given a lily pond stocked with lotus and planted on its borders with bamboos and caladiums, one would have the materials for an Oriental luncheon that would afford novelty at least. From it one could serve a dish of creamed bamboo shoots, roast "taro" or caladium roots, and a salad of lotus roots, which are white, succulent and are eaten raw with salt, vinegar and other condiments.

The bamboo requires no special culture. In the north, when grown for ornamental effect, rich soil—the richness can scarcely be overdone—full sunshine and an abundance of water are all that are necessary during the summer, and rough manure, leaves and litter around the roots in winter, with such protection for the tops as is available. While the plants are small they may be covered by a barrel or hogshead turned over them. Later they must be wrapped in straw or other protecting matter. Where there is a water system on the place a pipe can be carried into the bed and so a constant degree of moisture maintained.

There are many waste places in our Southern States that might, with profit, be planted with the bamboo, as without doubt it would prove entirely hardy in the Gulf States, and prove of much economic value. Though used principally —in this country—for chairs, easels, canes and fishing poles, its uses are infinite. In China it furnishes the material for nearly every article in daily use. It is the basket in which the coolie weighs his rice, the stick with which he carries it home over his shoulder, the chop stick with which he eats it, the material of which the chair in which he rides forth on business or pleasure is constructed. It furnishes the material for the parasol, with which he denotes his rank or protects himself from the heat of the sun. The fan owns its parentage; nor is the pipe with which he solaces his leisure hour strange to its manner of growth. It is used for making lamps, and its oil is employed for burning; it furnishes the paper and the pen with which to write upon it. The bamboo grows in immense quantities upon the mountain sides and along the waterways; hence it is the cheapest, most convenient material for all these different articles. Its durability and workability are astonishing. It is hollow, with joints from a few inches to two feet apart, giving the maximum of strength with the minimum of weight. It splits perfectly straight and as thin as desired. It combines flexibility with hardness, utility with beauty, strength with grace.

Arundinaria falcatia spreads its fan-shaped clumps, suckering freely from the roots

It is not particular as to soil, clinging to the rocky hillside where the soil is dry and poor and flourishing in the rich alluvial lands equally well. It is probable that most varieties would prove entirely hardy south of the Ohio River and along the Gulf Coast, should prove easily acclimated and a source of revenue in a very few years after planting, as the growth is rapid, and as nearly all varieties spread from the roots and "suckers," the single plant of to-day is the thrifty clump of to-morrow, or next year.

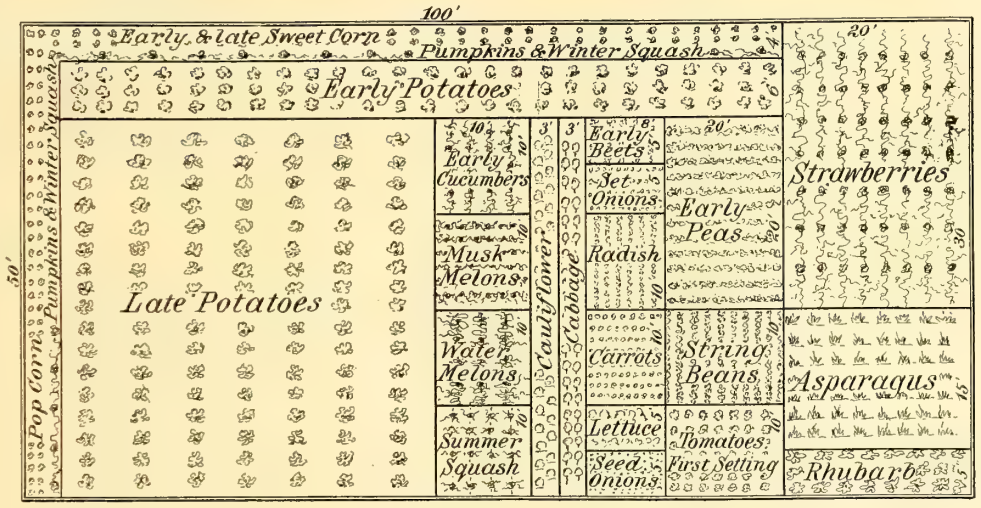
Why not, then, plant the bamboo plentifully and at least give it a trial? Success with it has been ample enough in many quarters to make it well worth the experiment. If the plant has not yet been admitted as a permanent addition to the American garden be assured this arises more from a natural hesitancy to introduce it than from any inherent faults of the bamboo itself. It has shown its hardiness in many places, and often under conditions of great severity.

Economizing Garden Space

By Craig S. Thoms

A WELL-PLANNED garden has three advantages. First, one secures a larger amount of vegetables from a given space; second, it is not more than half the work to keep it free from weeds; and, third, there is a distinct pleasure in planning it and seeing the plan realized during the season. My garden space is about fifty by one hundred feet, but the amount of vegetables that I take from this space to my table between early May and the last of October is a constant surprise.

My garden is in the city, and two sides lie to the street. These two sides I surround with two rows of sweet corn, which make a pretty border, give some privacy when the corn is grown, and furnish me with plenty of roasting ears. I am always away during August, and so I plant an early variety about May 1, which gives me its harvest during the last two weeks in July; and a late variety about June 1, which holds its harvest over until my return in September. Between the hills of the inner row of corn I plant hills of pumpkins and late squash, and let them run between the rows and out over the three rows of early potatoes that I plant beside the corn, and whose vines by August 1 are ripe and prostrate, thus affording plenty of sunlight for the pumpkins and squash. I am careful, however, to preserve free from my pumpkin and squash vines that particular corner of my potato rows from which I am to dig my early potatoes; and then, about August 1, I work this ground over and plant it to radishes and lettuce for fall use.



An economical garden plan

From my early radish bed I take two crops of radishes and one of late beets. In order to do this, when the radishes are ready for use, I pull up all the plants in each row as I go, not waiting for the more tardy ones to mature, and plant new seed for the second crop. This sacrifices a little on the first crop, but seed is cheap, and those plants that develop slowly never furnish choice bulbs, while there are always plants that will not develop bulbs at all, and for which one waits in vain.

The set onion bed I treat in the same way, cleaning the row of big and little alike, then working over the ground and putting in new sets. As in the case of radishes, only the onion that develops quickly is really choice. A small set, if given time, will grow a good sized bulb, but it will be strong in flavor; and not size but flavor is the prime consideration for the table. When the second sets are off I plant to turnips.

Tomatoes take lots of room, which I can not well spare, and so I have made a league between my tomatoes and my early peas and string beans. The tomato seeds are planted early, in the ordinary way, in boxes in the house, and when danger of frost is past I set the plants in a little plot of ground, which I have carefully prepared, in rows eighteen inches apart, and twelve inches apart in the rows. By the time I am picking my early peas and string beans these plants have attained considerable size; but there is no danger in transplanting if the work be done carefully with a spade after rain, and if a large spadeful of soil be taken up with each plant so that the roots are not disturbed. In this way I transplant from my crowded tomato bed to hills which I have prepared between the rows of peas and beans. I take out every alternate row of tomatoes, and two out of every three plants in the remaining rows. This leaves the plants that are not disturbed three feet apart each way. Then I am careful to push the pea and bean vines as far as possible from the newly set plants in order to provide them with plenty of sunlight. As soon as the pea and bean crop is harvested I pull up the vines, and thereafter the tomatoes have full possession of the ground, ready for vigorous growing.

My early lettuce I sow thickly in broad rows. As soon as the plants have leaves two inches long I pull them up by handfuls from the middle of the row, and use roots and all. This furnishes the table with a very delicate early lettuce and leaves plenty in the rows for larger growth. When the plants have become large enough I cut off the outside leaves for the table, and leave the plant to continually reproduce leaves from the center. My head lettuce are not allowed to head until midsummer. In this way, from a single planting early in the season, I have had lettuce, delicate and crisp, from the earliest growth until late in July.

My early beets I plant three times as thick as I want them to stand, and thin out when they are tender for use as greens. And those that I want to mature I leave standing three times as thick as the books allow, because beets are better, either fresh or pickled, when they are not allowed to grow to more than half their normal size.

Cucumbers for late pickling may be planted in July where early potatoes have been dug, or early peas or stringbeans grown; and cauliflower or cabbage plants for winter use may be set on any vacant ground in July, but the plants should be strong and healthy to insure vigorous growth.

To secure the best results the arrangement of one's garden should be planned carefully beforehand, so that the shape of the first beds will be suitable in form for the vegetables of the second planting. A good way is to make a plan of the garden on paper with every bed or row lettered, and the different plantings indicated, as in the accompanying cut.

A San Anto

By Smith

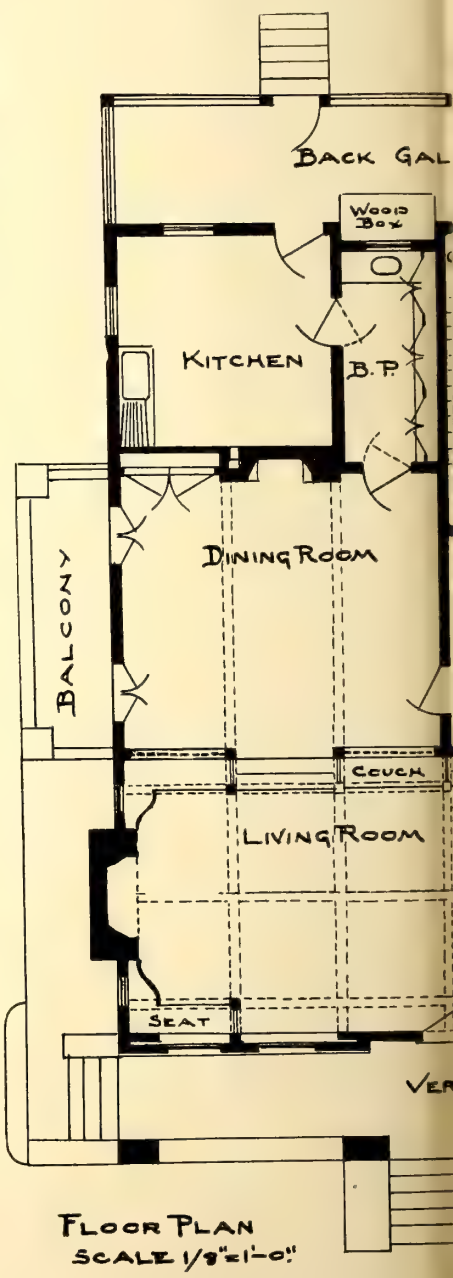
THE home of Mr. and Mrs. Robert Mavorick, on Alamo Heights, is built on the edge of a precipitous incline overlooking the Olmos Valley, commanding a beautiful view of surrounding hill country with the quaintest, most picturesque, and with one exception the oldest, city in the United States. Mr. Harvey L. Page was the architect and designer of this simple bungalow. Giant live oaks, pecan, laurel and elm trees surround this home, and in due season roses, palms, bananas and other tropical plants and vines that grow and bloom like magic here will add their beauty.

The architect found the material for his building close at hand; the galleries, columns and large arch marking the entrance are of fieldstone. The walls are rough-cast plaster filled in with rusty house-tank gravel, while the woodwork throughout is Texas pine stained a rich Mission brown. The rough plaster walls of the interior are treated with Cabot's shingle stains, the walls of the living-room, with its cobblestone fireplace and inglenook paved with red brick, being a soft mossy green, the dining-room red and hall yellow, with ivory ceilings throughout.

The experiment of using these transparent roof stains on plaster has proved to be a great success, and a softness and transparent richness is obtained with one coat that no

The porches are of fieldstone

The cobblestone fireplace and inglenook of the living-room



FLOOR PLAN
SCALE 1/8"=1'-0"

body color could give. The ceiling beams of the living room are slightly arched or cambered, which gives a great feeling of satisfaction. The dining-room fireplace and hearth are of Texas vitrified paving brick with joints raked far back. The simple mantelshelf is suspended by wrought iron chains from the ceiling beams. The architect has used simple barn strap hinges, painted flat black, with good effect on the doors, which are simply home-made V-beaded two-panel.

The owners are thoroughly artistic young people and have displayed exquisite taste in their fixtures and furnishings as far as they have gone, and never was a home built where clients and architect worked in more perfect harmony and accord from start to finish. It takes three factors to make a successful building: a good owner, a good architect and a good builder, and do not make the mistake of neglecting to supply any one of the trio.

The outside dimensions of this bungalow are fifty-seven feet by seventy-three feet, and the eaves project six feet. It was completed in a most substantial and satisfactory manner within a cost of five thousand seven hundred dollars.

There is not a molding used in the design, and the bedroom walls are daintily papered and the woodwork done in white with pole brass trim.

o Bungalow

nthony

The exterior walls are of rough plaster

Fireplace of Texas vitrified paving brick in the dining-room

A San Antonio Bungalow

By Smith Anthony

THE home of Mr. and Mrs. Robert Mavorick, on Alamo Heights, is built on the edge of a precipitous incline overlooking the Olmos Valley, commanding a beautiful view of surrounding hill country with the quaintest, most picturesque, and with one exception the oldest, city in the United States. Mr. Harvey L. Page was the architect and designer of this simple bungalow. Giant live oaks, pecan, laurel and elm trees surround this home, and in due season roses, palms, bananas and other tropical plants and vines that grow and bloom like magic here will add their beauty.

The architect found the material for his building close at hand; the galleries, columns and large arch marking the entrance are of fieldstone. The walls are rough-cast plaster filled in with rusty house-tank gravel, while the woodwork throughout is Texas pine stained a rich Mission brown. The rough plaster walls of the interior are treated with Cabot's shingle stains, the walls of the living-room, with its cobblestone fireplace and inglenook paved with red brick, being a soft mossy green, the dining-room red and hall yellow, with ivory ceilings throughout.

The experiment of using these transparent roof stains on plaster has proved to be a great success, and a softness and transparent richness is obtained with one coat that no body color could give. The ceiling beams of the living room are slightly arched or cambered, which gives a great feeling of satisfaction. The dining-room fireplace and hearth are of Texas vitrified paving brick with joints raked far back. The simple mantelshelf is suspended by wrought iron chains from the ceiling beams. The architect has used simple barn strap hinges, painted flat black, with good effect on the doors, which are simply home-made V-beaded two-panel.

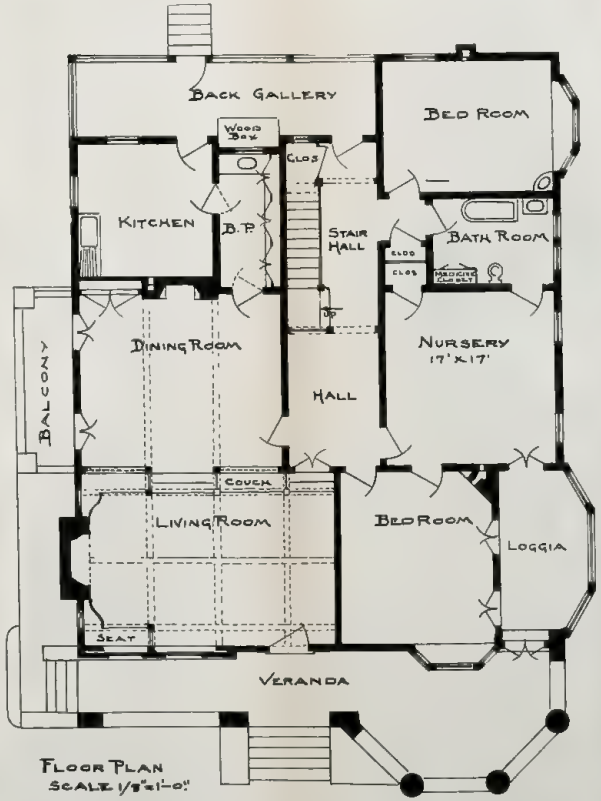
The owners are thoroughly artistic young people and have displayed exquisite taste in their fixtures and furnishings as far as they have gone, and never was a home built where clients and architect worked in more perfect harmony and accord from start to finish. It takes three factors to make a successful building: a good owner, a good architect and a good builder, and do not make the mistake of neglecting to supply any one of the trio.

The outside dimensions of this bungalow are fifty-seven feet by seventy-three feet, and the eaves project six feet. It was completed in a most substantial and satisfactory manner within a cost of five thousand seven hundred dollars.

There is not a molding used in the design, and the bedroom walls are daintily papered and the woodwork done in white with pole brass trim.

The porches are of fieldstone

The cobblestone fireplace and inglenook of the living-room



FLOOR PLAN
SCALE 1/8"=1'-0"

The exterior walls are of rough plaster

Fireplace of Texas vitrified paving brick in the dining-room

CORRESPONDENCE

The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

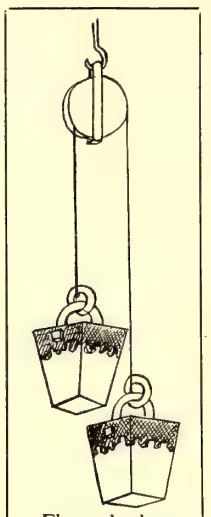
By Alice M. Kellogg

Author of "Home Furnishing: Practical and Artistic"

FLOWER BUCKETS

"SOMEONE has told me about a kind of bucket to hold flowers," writes H. A. F., of New Hampshire. "I think I would like something of this kind in my home, but I do not know where to send for it nor how to describe it. Have I been misinformed? If not, where could I send, and what would be the price of a pair?"

The pen-and-ink sketch gives a very good idea of a pair of Japanese flower buckets. They are usually hung in front of a window, and are used for cut flowers or plants that will thrive in water. Earth is rather heavy for the cord on which the buckets are tied. While the general shape of the flower buckets is similar, the decoration varies, as well as the colors. Sometimes a basket-work is fastened around the sides. The price runs from two dollars up to six, and the large cities show them in their Japanese shops.



Flower buckets

BREAKFAST ROOM FOR A PROFESSIONAL WOMAN

A professional woman in a large town, Miss K. G., is desirous of fitting up a little room in her apartment as a breakfast-room, where she may prepare an informal meal for herself, and also for her friends on Sunday evening. In her letter she says: "I would like to make my eating place dainty and attractive, yet with practical arrangements for simple meals. I am away for luncheon and dinners, but I should enjoy having the home element in my morning repast."

If the woodwork can be painted white and the pieces of furniture, chairs, table, corner-cabinet and serving-table, stained gray, the walls could be covered with a charming garden paper printed in pinks, greens and grays. This would allow a green curtain to be hung over a white muslin curtain, finishing the former with chintz braid. For a rug a green Caledon may be used, with a border in two shades of the same color. The candlesticks may be of glass with pink shades, and brass sconces may be hung against the wall for the extra illuminating. An oval-shaped mirror with gilt frame would be pretty against the wall paper.

Green linen doylies may be used on the table, with an English china decorated in roses, and a few pieces of the green saji ware. If there is no kitchenette (this is not mentiond in the letter) it will be necessary to screen off a portion of the room for a refrigerator or ice-chest and a table for washing the dishes.

SUBSTITUTE FOR A "HALL PIECE"

"Where no combination hat and umbrella is used in a hall," inquires J. C. B., of South Carolina, "what would you suggest in its place?"

The combined hat tree, seat and umbrella stand is not in such general use as it used to be, as a more artistic generation has discovered its inability to produce a satisfactory effect. Some kind of a seat or settle, however, is necessary for the hall, and over this a mirror with a wooden frame may be hung. A few metal hooks may be fastened to the mirror frame for holding the hats of visitors, and a well constructed costumier may be placed near for outer garments. A porcelain tile may be used for holding umbrellas, choosing some design that is not seen in every department store, or a holder may

(*Continued on Page x*)

Garden Work About the Home

By Charles Downing Lay

"TREE DOCTORS"

THE country seems to be full of various wanderers who call themselves tree doctors, horticultural experts or what not.

Some of them may be good, but most, I think, are living on the universal admiration for fine trees; an admiration which is seldom tempered by any knowledge or even common sense, so that it is easy for the tree expert to convince an owner of old trees that they need pruning.

In the present case I can only advise "Hortensia" to look at work done, say two years ago, by the experts she proposes to employ. If that work is satisfactory and the owners are pleased, then it will probably be all right.

As a general thing tree doctors do too much work; try to save trees which are past saving, and which would be worthless if their miserable existence were prolonged for a few years.

If a tree has real historic or sentimental interest it may be worth much to save it, but the abuse of trees has been so great in the past, and their neglected state is so hopeless now, that many of them had better be cut at once and new trees planted to take their place.

I have seen many trees ruined by ignorant pruning; not only have they been killed by the severity of the treatment, but their appearance has been spoiled even if they should live.

An old tree may have much picturesque beauty, with its dead branches, deep holes where old stubs have rotted away, and its air of antiquity: a relic of past time. The same tree cleaned up, pruned, the holes carefully cemented, is likely to look ridiculous; like an old and decrepit man turned dandy.

The object of pruning is to increase leaf surface, which is done by cutting back the branches and not by thinning them out, as some seem to think. Cutting back a branch by one-third sends the sap allotted to that branch into fewer leaves, which consequently grow larger—larger in area than the greater number of leaves would be on the unpruned branch. This increased leaf area means increased power and opportunity to elaborate sap, and hence greater vitality.

It is a safe rule to head back an old tree one-third the length of each branch. The cutting must be done with care and intelligently, and it can be done so that one would never know the tree had been pruned.

The tree will look a little stiffer, there is no doubt of that, because it will loose the slender tips of its branches, but the increase in its vigor will make up for its loss in grace.

The cut should always be made in a crotch, that is, just above a side branch; then the side branch should be pruned further out and the whole will have a more natural appearance, diminishing in size to the tip.

If it is not done this way, but is cut off anywhere, leaving a stub, the result will be horrid, because the stub will die back to the next lateral branch or a bunchy lot of shoots will start to grow from the end. For a season or two a pruned tree may look stubby anyway; this depends somewhat on the kind of tree, but more upon the skill of the one who prunes it. Each cut should be as close as possible to a side branch, no matter how large the cut, so that the wound will heal quickly, and the raw surface should be painted with coal-tar to keep out fungi.

Scraping the old bark off is no benefit to the trees, except as it may dislodge insects, and it gives the tree a horrid naked appearance which lasts for several years.

Filling holes in the trunks may be worth doing, if they are not too large; covering with tin is useless, as the bark will not grow over it, but a solid filling of concrete, properly joined to the sides of the opening, will in time be covered.

(*Continued on Page xv*)

THURMAN'S

Portable Electric Vacuum Cleaner

The most perfect electric portable cleaner and latest triumph of J. S. Thurman, originator of Vacuum Cleaning Machinery, after years of experience in designing, building and operating this class of machines. It has the most advanced and improved features known to electric portable cleaning. Is light, operated by the housemaid, mechanically perfect, easily portable, built to last.

Vacuum Pump Creates Absolutely Constant Suction

through cleaning apparatus to dust tank, effectively removing dust, dirt, grime, moth eggs, vermin, etc., from floors, rugs, carpets, draperies, etc., without beating, brushing or injury. It accomplishes by one process sweeping, renovating and dusting at the same time, and is

The Latest Improved Housecleaning Apparatus

Can be operated in any building wired for electric lighting and more than saves its cost in labor, wear and tear in a short time.

Tools for special work: Stair and stair edge, tapestry upholstery, tuft button, wall, wood, floor, clothes, face and body massage and many others are given with this machine. It more than makes up in quality and efficiency for the difference in cost between this and inferior makes of cleaners. Price for Thurman Portable Electric Vacuum Cleaner, direct current, $150.00; alternating current, $165.00. Sent on one week's trial; money refunded if not as represented. Catalog and price list free. Get the best when purchasing.

General Compressed Air and Vacuum Machinery Co.
4436 Olive Street, Dept. Q., St. Louis, Mo.

COULTER & WESTHOFF, Architects, Saranac Lake

Beautiful **Silver Gray** and **Moss Green, Italian Tile Red, Etc.**— These are the artistic colors produced on your **Bungalow** or **Cottage** by using

DEXTER BROTHERS' English Shingle Stains

No disagreeable odor.

Samples of colors on wood sent FREE

Dexter Bros. Co., 109 Broad St., Boston, Mass.

AGENTS: H. M. Hooker Co., 128 W. Washington St., Chicago; W. S. Hueston, 6 E. 30th St., New York; John D. S. Potts, 218 Race St., Philadelphia; W. W. Lawrence & Co., Pittsburg, Pa.; F. H. McDonald, 619 The Gilbert, Grand Rapids, Mich.; F. T. Crowe & Co., Seattle, Spokane, Tacoma, Wash., and Portland, Ore.; Klatt-Hirsch & Co., 113 Front St., San Francisco, Cal.

Wall Papers and Wall Coverings *A Practical Handbook*

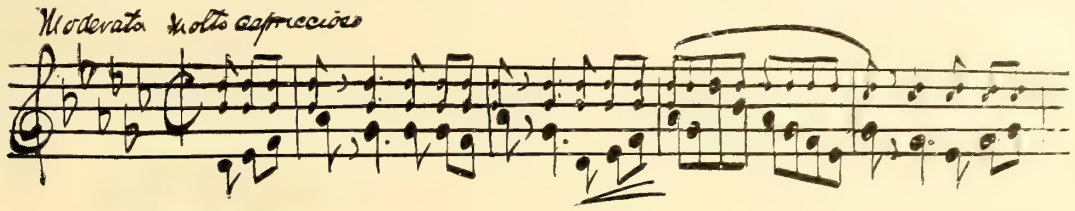
For Decorators, Paperhangers, Architects, Builders and House Owners, with many half-tone and other illustrations showing latest designs

By ARTHUR SEYMOUR JENNINGS

Includes characteristic designs in vogue to-day. Gives reliable information as to the choice of Wall Papers and describes the practical methods of applying them

One Large 8vo Volume. Cloth. Price $2

MUNN & CO., 361 Broadway, NEW YORK



Cécile Chaminade

As the piano best adapted for expression of musical thought, Mme. Cécile Chaminade has, for her first American recital tour, chosen

The EVERETT PIANO

The synonym for "best" in pianos — a tonal masterpiece rich in all artistic attributes — used and enthusiastically endorsed by Carreño, Reisenauer, Neitzel, Nordica, Bispham, Gabrilowitsch and scores of leading artists.

Prices vary according to styles — Regular Style Uprights from $500.00 to $675.00. Grands from $725.00 to $1500.00. Designs in Art Cases — an **Everett** specialty—cost more.

If your dealer does not sell the **Everett**, write us. We can make it easy for you to inspect the piano before purchase. We can also arrange purchase on convenient terms.

THE JOHN CHURCH COMPANY,

Cincinnati **Chicago** **New York**

Owners of The Everett Piano Co., Boston, Mass.

SEND FOR OUR CATALOG, "HOME HEATING"

HOT-WATER HEATED by ANDREWS SYSTEM $198 EACH

UNITED STATES — ALASKA — CANADA — NEWFOUNDLAND

IT IS WELL WORTH READING

Paper Patterns for Heating Plants

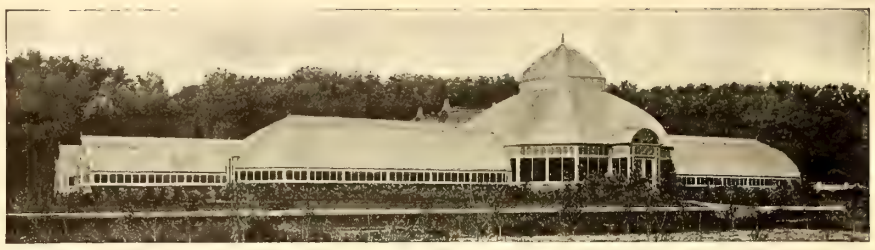
About 40 years ago a man named Butterick made a business of cutting patterns for men's shirts. His wife suggested that patterns be made in similar manner for women's and children's clothes. He did this, and the result is the present tissue-paper pattern used in every home. By using these patterns any woman who can sew can **save half the cost** and make clothes fully as attractive and serviceable as she can get from a professional dressmaker.

We make patterns for Heating Plants. Send plan or sketch of your house for exact **estimate free.** Our price will include best radiators, pipes cut to fit, fittings, valves, gold bronze, and the now famous Andrews Steel Boiler. Everything complete, ready for erection, with diagram and directions, so any man handy with tools can erect. Andrews **Steel Boiler** has double heating surface, requires less fuel, is simple, durable, easily cleaned, and needs no repairs. We furnish the hottest radiators (100 square feet with the Andrews System will do the work of 150 feet with the others); perfect control secured by our Regurgitating Safety Valve and Group System of piping. We design, manufacture, guarantee and sell each plant direct from **factory to user,** giving you the lowest price for the value. Don't buy a heating plant, either water or steam, **until you have sent for our catalog,** "Home Heating," which explains fully how you can erect your own plant and save plumbers' charges. Send for list of our customers in your vicinity and examine their plants. We do it right in 44 States, Canada and Alaska. Plants guaranteed and sold on **360 days' trial free.** (Remember we manufacture the most economical boiler, furnish the quickest circulation, hottest radiators and lowest price for the value.) **Freight Rates Equalized.** Cut out this ad. to-day, send names of other people going to buy and get full particulars. Old houses easily fitted.

HOME HEATING

ANDREWS HEATING COMPANY, 825 Heating Building, MINNEAPOLIS, 783 LaSalle Building, CHICAGO

MANUFACTURERS CONTRACTORS CONSULTING ENGINEERS



GREENHOUSES FOR ESTATES

The extensive propositions which cover both the ornamental show houses and those used solely for growing cut flowers, fruit or vegetables—these are the sort of things we are admirably equipped to handle—it is these larger schemes that test the skill of greenhouse building. We are constantly building for the largest estates in the country. The smaller houses, however, receive our same attention and skill.

Send for circular about some of the numerous houses we have erected, which covers both the larger and smaller ones.

HITCHINGS & COMPANY

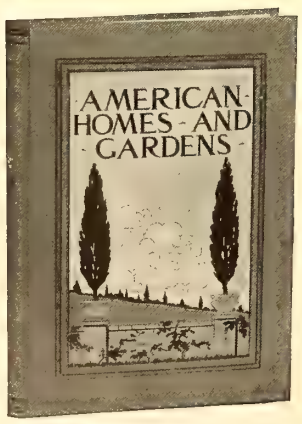
1170 BROADWAY, NEW YORK CITY

Bound Volumes of American Homes & Gardens 1908

494 Pages, 1,100 Illustrations. Price, $5.00

AMERICAN HOMES & GARDENS covers a wide scope; it deals with house building from the design and construction of modest cottages on tiny lots to the building of mansions on large estates. All degrees of gardening, from laying out a landscape to the planting of a window-box, are dealt with. Practical questions of water supply, of sanitation, or of the arrangement of the kitchen receive equal treatment with draping of windows or the arrangement of old china.

AMERICAN HOMES & GARDENS is beautifully printed. The year's volume contains more than a thousand engravings, as full of detail and finish as actual photographs. They depict some of the old and historic mansions of America, and the most beautiful of gardens or of natural scenery. The following list of a few of the principal practical articles which appeared in *American Homes and Gardens* during 1908 will show the wide choice of subjects:



Notable American Homes (12 descriptive articles); The Rose as a Summer Bedder; Private Automobile Garages; Leaded Glass Windows; Etching on Copper and Brass; Problems in House Furnishing (12 papers); Garden Work about the Home (12 papers); Indoor Bulb Culture; Farming Experiment of a Woman; Rugs from the Scrap Bag; Water Parks; Old Time Lights; Latches and Knockers; The Sun Room; Japanese Gardens in America; Sun Dials; Heating and Lighting with Alcohol; Spring Houses Old and New; Planning a Country Home; The House Roof and its Garden; The Plant and the Season; Garden Streams and Bridges; Stencil Work in Home Decoration; Bungalows (12 articles); Scientific Poultry Breeding.

A limited number of volumes for 1907 are available. 480 pages. 1,050 illustrations. Price $5.00. Volume for 1906, $5.00. Volume for 1905, $3.50.

MUNN & CO., Publishers, 361 Broadway, New York

PROBLEMS IN HOME FURNISHING

(*Continued from page 40*)

be found that is made of mahogany or oak and bound with brass hoops. A small table to hold a card tray and small packages or letters is also a needed fitting for the hall.

SOME QUERIES ON WINDOW SHADES

"How should window shades fit the windows? Should they be placed between the casing, or should they extend across the frame? Shall I use a white or a colored shade? Is fringe in good style? I have seen some striped material at the windows lately, but do not know if it would be wise to have it in my home."—B. R. O.

The striped or Venetian shades are a novelty, but are not an improvement on the standard Holland in plain colors. Being a purely utilitarian article, a shade should be as unobtrusive as possible. For this reason a fringe is better omitted. As to the proper color to adopt, this depends upon the exterior casement trimmings and the finish of the inside woodwork. Instead of pure white, a cream white shade will prove more agreeable in tone. If there are no shutters nor awnings a dark green or dark blue shade will be required on the sunny sides of the house. A buff color is usually a safe choice where one shade is used. If a color is exposed very much to the light the sunfast Holland is the more enduring fabric. The method of hanging a window shade depends upon the construction of the window casing. By placing the shade between the casement it does not interfere with the brackets for the curtains. If no curtain is to be put up, the shade may be hung across the frame to shut out any cracks of light. A new device for fastening the drawing cord to the shade may be looked up by this correspondent.

BATHROOM RUGS

A correspondent who has only lately taken up housekeeping has not found the right kind of a rug for her bathroom. "Please suggest," she writes, "in your department of furnishing, some kind of a rug that will be pleasant to use in a bathroom. I have tried one or two, but do not like either of them. Is an Oriental rug appropriate for this room?"

The best rug for a bathroom is made in this country in a mixture of colors that gives a mottled effect, and costs, when made up to order, about a dollar a square foot. A narrow border finishes the edges. This rug is very heavy and soft, and the coloring will go with any tiling or paper. Another woolen rug for the bathroom is made of a plain color with a border in the same tone broken with white. The cotton rugs look well for only a short time and do not give the wear of the woolen. Hand-woven rugs in tapestry cloth are a dainty looking rug for a guest's room. A delicate rug may be kept in better condition by using mats of Turkish toweling. These come in white and colors. The color of the tiling is now made the keynote for any additional colors that are introduced in this part of the house, even to the marking of the linen and the decoration of the mugs and soap dishes.

For Five Dollars

American Homes and Gardens and Scientific American

SENT TO ONE ADDRESS FOR ONE YEAR

Regularly Six Dollars

NEW JERSEY CENTRAL

New York to PHILADELPHIA

Two-Hour Train
Every Hour

ON THE HOUR
From Foot of Liberty Street
(7 a. m. to 6 p. m.)

In Addition to Other Trains

TEN MINUTES BEFORE THE HOUR
From Foot of West 23d St.

ATLANTIC CITY IN THREE HOURS
LAKEWOOD IN NINETY MINUTES

BOOKLETS FOR THE ASKING

W. C. HOPE, *General Passenger Agent*
NEW YORK

Finicky Furnaces

Steam and Hot Water Boilers
Easily Regulated

Let the little **General Manager** make "just right temperature" a certainty in your home all day and all night.

This Jewell Controller with Time Clock attachment is the only absolutely accurate controller of temperature made.

You can set it at any temperature and your room will remain at that temperature regardless of outside changes. You can set it for 60 degrees or any temperature at night, and if you like 70 degrees at 7 o'clock, set the time clock attachment for 6.30 and at 6.30 your room will begin to warm up, and at 7 it is 70 degrees without anyone having done anything to the furnace or the controller.

Convenient? Yes—and unfailing.

The Jewell Controller
With Time Clock Attachment

never loses thermostatic control night or day for a moment. Cannot run down with draught on.

You can depend upon the Jewell—not only to settle the "Just Right Temperature" question in your home, but to save coal bills enough to pay for itself in a very short time, to say nothing of doctor bills. The discomfort of uneven heat and danger of colds and resulting serious illnesses are entirely avoided in its use. Every house ought to have one

It is convenient — economical — ornamental—**necessary** to good health.

Regulates Steam, Hot Water and Hot Air with the same unfailing accuracy. Write for booklet "The House Comfortable" and free trial offer.

JEWELL MFG. CO., 63 N. Green St., AUBURN, N. Y.

Bound Volumes of American Homes and Gardens

Volume for 1905 **$3.50**
Volume for 1906 **$5.00**
Volume for 1907 **$5.00**

MUNN & CO., Publishers 361 Broadway, New York

The expense and annoyance of painting will not recur every year or two if you use

DIXON'S SILICA-GRAPHITE PAINT

the "Proven Shield for Steel Work." Durability records in all climates; write for a few.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

The Artistic Value of Hardware

There is a value in hardware fittings far beyond actual cost or mere utility—a lasting decorative value that cannot be overlooked by the home builder. The possibilities for effective ornamentation in hardware are many—and find their greatest expression in

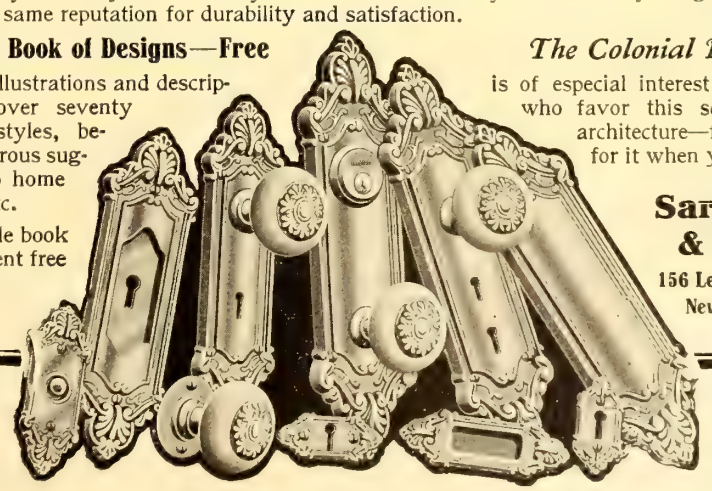
Sargent's Artistic Hardware

Wide variety assures you whatever your individual taste may dictate—every design carrying with it the same reputation for durability and satisfaction.

Sargent's Book of Designs—Free

Contains illustrations and descriptions of over seventy beautiful styles, besides numerous suggestions to home builders, etc.

A valuable book to you— sent free on request.



The Colonial Book

is of especial interest to those who favor this scheme of architecture—free. Ask for it when you write.

Sargent & Co.
156 Leonard St.
New York

THE TELEPHONE COMMONWEALTH

On November 3 the universal usefulness of the Bell System was shown as never before. It was an intimate, integral part of the election machinery. And by the time old Trinity Steeple chimed midnight the Bell Service had reliably informed farmers and householders throughout the nation that Mr. Taft was elected.

THE returns telephoned by seven o'clock from election district to election district in Erie County, New York, indicated by a rule the politicians follow that Taft had carried the State of New York.

By eight o'clock the crowds in front of the newspaper offices knew it.

By eleven the approximate size of the majority in Ohio was known.

In the newspaper offices of the single city of Philadelphia, between 200 and 300 Bell telephone operators were announcing the bulletins to every subscriber who "rang up."

In thousands of newspaper offices over the country, tens of thousands of operators were doing the same thing.

In what other country could it have happened?

Comparison is futile. Yet as a telephone achievement it only marks the *passing point of progress* reached by a service which set out in the beginning to occupy the *whole field* of telephony.

The apparatus, the operators, the lines—the whole equipment of the service simply measured up to the *busiest hour capacity* of the Bell Companies.

But it is an object lesson to those who are really interested in the development of the telephone to its point of greatest public utility.

It emphasizes the value of federation in national telephone work—the necessity of co-operation, of a common investment which *provides an equipment, on a business basis,* capable of carrying the country's telephone traffic at the *busiest hour* of the *busiest day.*

This cardinal principle which guided the original Bell Telephone Company remains the guiding influence in the affairs of the associated Bell Companies.

There is an investment in the equipment of these companies to-day of about $600,000,000. The wonderful development which has resulted from this unexampled investment, which is being increased at the rate of over $50,000,000 a year, has given America the leadership of the world.

The press of other countries hold up the Bell Telephone System as an example of what the telephone systems in their own countries *might become* under proper management.

The press of Paris has been agitated for some months over a "telephone crisis," brought about by the "extreme inefficiency" of the service, which is conducted by the Post Office Department.

After much debate a programme has been announced, calling for *five* new telephone exchanges in Paris to cost $6,000,000, and cable work estimated at another $6,000,000, *a period of four years being allowed for the execution of this work.*

An English telephone expert examined the working of the Bell Telephone System during the present year, as compared with the system of England.

"I venture to say," he wrote in The London Times of August 12, 1908, "that ninety-nine out of one hundred business men in Great Britain would gladly pay *twice* the rates they now pay for trunk telephone calls if they could be assured of a service approaching the efficiency of the American service."

Every subscriber to the Bell service becomes a member of a great, national *telephone federation* whose watchword is *promptness;* a brotherhood of *quick communication* which is the life of American civilization.

American Telephone & Telegraph Company

JUST PUBLISHED

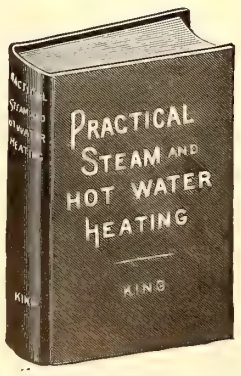
Practical Steam and Hot Water Heating and Ventilation

JUST PUBLISHED

By ALFRED G. KING

402 Pages. Containing 304 Illustrations

Price $3.00



An original and exhaustive treatise, prepared for the use of all engaged in the business of Steam, Hot Water Heating and Ventilation

THE standard and latest book published. Tells how to get heating contracts, how to install heating and ventilating apparatus. Describes all of the principal systems of steam, hot water, vacuum, vapor and vacuum-vapor heating, together with the new accellerated systems of hot water circulation, including chapters on up-to-date methods of ventilation; fan or blower system of heating and ventilation; rules and data for estimating radiation and cost, and such other tables and information as make it an indispensable work for heating contractors, journeymen steam fitters, steam fitters' apprentices, architects and builders.

This work represents the best practice of the present day and is exhaustive in text, diagrams and illustrations.

CONTAINING CHAPTERS ON I. Introduction. II. Heat. III. Evolution of Artificial Heating Apparatus. IV. Boiler Surface and Settings. V. The Chimney Flue. VI. Pipe and Fittings. VII. Valves, Various Kinds. VIII. Forms of Radiating Surfaces. IX. Locating of Radiating Surfaces. X. Estimating Radiation. XI. Steam-Heating Apparatus. XII. Exhaust-Steam Heating. XIII. Hot-Water Heating. XIV. Pressure Systems of Hot-Water Work. XV. Hot-Water Appliances. XVI. Greenhouse Heating. XVII. Vacuum Vapor and Vacuum Exhaust Heating. XVIII. Miscellaneous Heating. XIX. Radiator and Pipe Connections. XX. Ventilation. XXI. Mechanical Ventilation and Hot-Blast Heating. XXII. Steam Appliances XXIII. District Heating. XXIV. Pipe and Boiler Covering. XXV. Temperature Regulation and Heat Control. XXVI. Business Methods. XXVII. Miscellaneous. XXVIII. Rules, Tables and Useful Information.

Valuable Data and Tables Used for Estimating, Installing and Testing of Steam and Hot-Water and Ventilating Apparatus are Given

MUNN & COMPANY, PUBLISHERS, 361 BROADWAY, NEW YORK CITY

ESTIMATING WHAT YOUR HOUSE WILL COST

By George F. Walsh

WHAT architects call "a snap estimate" will often be made for prospective clients who indicate a preference for a certain style of house. Such an estimate can only be regarded of particular value as a guide and not as a guarantee, and it holds only so far as the house builder lives up to the rough specifications furnished. A slight increase in the size, an addition of a few exterior extras, such as porches, pergolas and conservatories, and the adoption of more expensive systems of plumbing, heating and lighting, necessarily invalidates the "snap estimate" and makes a new one imperative.

A detailed knowledge of the methods employed by architects in reaching their "snap estimate" is often of great practical value to the prospective house owner. It should serve as a guide in deciding upon the kind of a house needed, and materially help where the services of an overseeing architect are not obtained. Plans of houses are drawn up by many architects, and, with the specifications, sold to builders in all parts of the country. Unless the intending builder understands some of the fundamental principles which govern the cost of house construction such plans may prove misleading and in the end very unsatisfactory.

Again, one contemplating the erection of a home makes a study of houses in different parts of the country, and from these many observations arrives at what he considers an ideal plan. He combines in his own home all the good points of several houses which appeal to him. What will it cost to erect a house according to certain rough sketches which he may be able to draw on paper? It is an interesting and fascinating work, this study of your neighbors' houses and the evolution of your own through a process of elimination and selection.

Architects generally make their "snap estimate" both by the cubical contents and by the square foot, with such special considerations of interior finish and equipment as the style of house naturally calls for. Even after a detailed study and estimate of the problem, the architect does not guarantee absolutely the price. The submission of the plans and specifications to a contracting builder must be the final test, and the owner gets his guarantee from the latter. The builder makes even a closer and more minute estimate than the architect, and then accepts the risk of signing the contract on the strength of his own figures.

The estimate made by the square foot should coincide with the figures reached by the estimate according to the cubic foot. Thus one checks off the other, and makes the estimate more reliable. The first essential is to draw on paper as accurately as possible the ground plan of the house, giving each room and closet its exact size in feet and inches. It should be understood at the outset that a square building is easier to design than one with many curves and angles, and also that it is cheaper to construct and gives more useful space inside. So far as possible the design should, therefore, be drawn in a square or a rectangle. Of course, it may be impossible to follow either of these figures absolutely, for the style of house may not admit of it, nor the shape of the lot on which the house is to stand prove suitable. Both of these considerations must not be overlooked.

The next point is to take up the location of the chimney, furnace and kitchen range, and the plumbing system. An extra chimney and fireplace add considerably to the cost of the house. If the dining-room, library, and

kitchen can be so arranged that flues lead from each into one chimney a big item of expense will be saved. This can generally be accomplished in a square house by running the chim- just back of the kitchen so that the dining-room and library fireplaces can be grouped around it. Similarly the plumbing should be designed, as far as possible, so that the pipes run in a direct vertical line. Long pipes increase expense and add to the danger of freezing in winter. With the plumbing system designed in compact form, with no long pipes, the expense is materially lessened. The heating apparatus, whether steam, hot water or furnace, should be centrally located so that the distribution can be made equal throughout the building. In dry-air furnaces a long pipe running to rooms located on the north or west sides will be the last one to get heated up, and the service will always prove the poorest in that one. If anything, the furnace should be located nearer the north and west walls of the cellar than the east or south walls. The pipes for the more exposed and colder sides will thus get more direct heat in winter.

With these facts kept clearly in mind, the dimensions of the house can be made, and a rough estimate of its cost of construction obtained. Prices of labor and materials differ in various parts of the country, and the tendency is for both to increase. But architects estimate that modern wooden houses will cost from two dollars to five dollars per square foot; brick houses from four dollars to eight dollars, and concrete block houses, stucco, terra cotta block and brick veneered houses from three dollars to eight dollars per square foot. On the same basis a modern wooden house will cost from eight to fifteen cents per cubic foot, and brick ten to twenty-five cents, and other materials proportionately.

From these figures it will be seen that the variation in cost is considerable, and the amateur estimator could easily come a long way from even an approximate estimate. But this is more apparent than real. The great difference in the prices is due chiefly to the interior finish and equipment. One does not expect to put expensive nickelplate plumbing systems, elaborate gas and electrical equipments, and costly steam heating apparatus in a three thousand dollar house. On the other hand, if the lowest cost is used in the estimate, plumbing, heating and lighting systems must be scanted, and many of the little points of interior finish omitted. The way to estimate on these different equipments will be treated later.

Find out the number of square feet in the ground plans of the sketch drawn for your own guidance by multiplying length by breadth. To do this additions and angles must be calculated carefully and separately from the main part of the structure. Verandas that are covered are usually estimated separately in the same way and then divided by two. Add up all the figures thus secured, and for a small, comfortable, but not elaborately finished, house, multiply the sum by three dollars, or if a finer interior equipment is desired multiply by four dollars, to get the "snap cost."

To estimate by cubical contents, the square of the ground plan is multiplied by the height, measuring from the bottom of the cellar to the top of the roof. Owing to projections and windows in the roof no allowance is made for the smaller cubical contents of the roof than the body of the house. With the cubical contents obtained, it is a simple matter to secure the snap estimate by multiplying the result by ten cents for a modern, comfortable wooden home, and by fifteen cents for a more ambitious structure. Brick houses cost from fifteen to twenty-eight cents per cubic foot. It is never safe to figure on less than ten cents

This is where we manufacture our Monarch Porcelain Ware
Trenton, New Jersey

Uniformity of Design

Architects DO appreciate the fact that by specifying Wolff Plumbing Material exclusively they are protecting their clients from the annoying confusion of design and mechanical standards that is sure to creep into even the most carefully selected line of "assembled" plumbing equipment.

L. WOLFF MANUFACTURING COMPANY

Established 1855

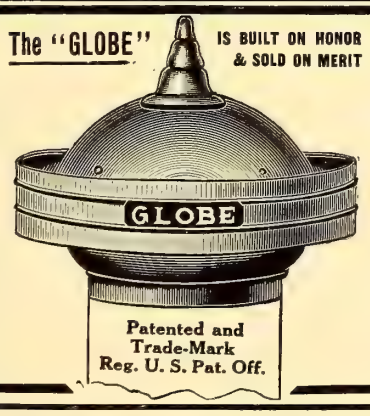
Manufacturers of PLUMBING GOODS EXCLUSIVELY

The Only Complete Line Made by Any One Firm

Showrooms: 91 Dearborn St.

Denver CHICAGO Trenton

The "GLOBE" IS BUILT ON HONOR & SOLD ON MERIT



Patented and Trade-Mark Reg. U. S. Pat. Off.

THE "GLOBE" VENTILATOR

IN GALVANIZED IRON, BRASS AND COPPER
ALSO WITH GLASS TOPS FOR SKYLIGHT

Simple, Symmetrical, Storm-proof, Effective. For perfectly ventilating buildings of every character. Send for model and pamphlet. **Smoky Chimneys Cured**

"Globe Ventilated Ridging"

Mfd. by GLOBE VENTILATOR CO., TROY, N. Y.

ATLAS PORTLAND CEMENT

Makes The Best Concrete

THE ATLAS PORTLAND CEMENT COMPANY, 30 BROAD STREET, NEW YORK

American Homes and Gardens *and* Scientific American will be sent to one address for $5.00

Regular Price, $6.00

Wood Finishing

Successful Only With Johnson's Wood Dyes

JOHNSON'S Wood Dyes provide the only means of finishing woodwork, furniture and floors in the home. Because Johnson's Wood Dyes are all that the name implies. They are dyes, not stains. Colored varnishes simply give a painty effect to the wood you wish to color. Any finish on any wood fails of its purpose when it merely *covers up the wood* and the wood's grain.

To bring out the beauty of the wood grain, select the shade you wish from the 15 shades of Johnson's Wood Dyes, and you will get the effect you want.

Remember, Johnson's Wood Dyes are not a combination of stain and finish—they are dyes—pure and simple—they color the wood without raising the grain—they do not coat over the wood. Heel marks, mars and scratches do not show the bareness of the natural wood.

The dye penetrates the wood—the finish is another matter.

Color woodwork, floor or furniture—with Johnson's Wood Dyes—and then apply a finish of two coats of Johnson's Prepared Wax.

JOHNSON'S
ARTISTIC WOOD FINISHES
JOHNSONS

Remember, you cannot get the effect you want unless you apply a finish *over* the Dye. The use of two coats of Prepared Wax Black will give a beautiful, rich, artistic finish. For a higher gloss than the wax gives, use Johnson's Underlac—better than shellac or varnish—and then the Prepared Wax over the Underlac. Our interesting 48-page color book—"The Proper Treatment of Floors, Woodwork and Furniture"—tells how you can easily finish and refinish all wood. Write to-day for booklet, edition AH-1. There are fifteen standard shades of Johnson's Wood Dyes.

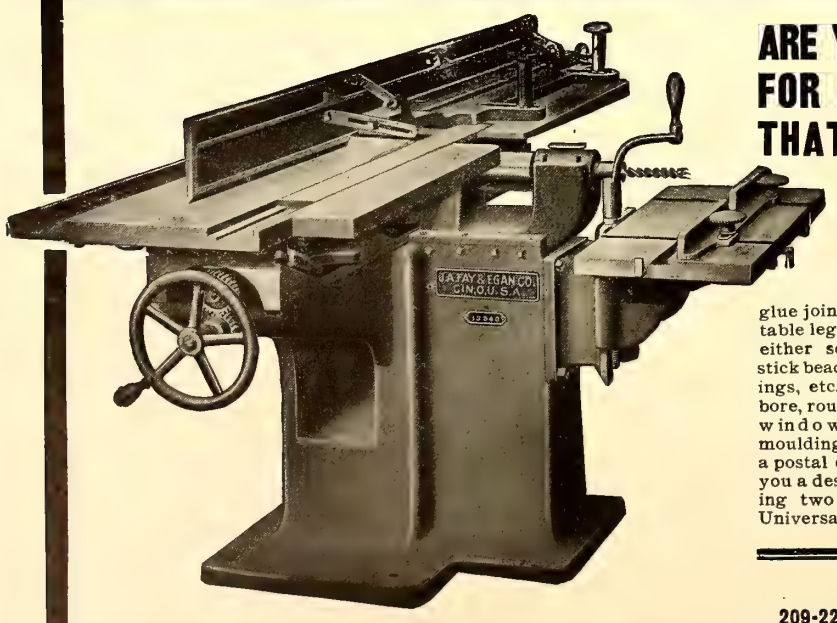
No. 126 Light Oak
No. 123 Dark Oak
No. 125 Mission Oak
No. 140 Manilla Oak
No. 110 Bog Green
No. 128 Light Mahogany
No. 129 Dark Mahogany
No. 130 Weathered Oak.
No. 131 Brown Weathered Oak
No. 132 Green Weathered Oak
No. 121 Moss Green
No. 122 Forest Green
No. 172 Flemish Oak
No. 178 Brown Flemish Oak
No. 180 Silver Gray

Half-pints 30c.; pints 50c. Johnson's Prepared Wax, 10c. and 25c. packages. Also sold in large sizes. For sale by all leading paint dealers.

If you desire to refinish wood now varnished, get Johnson's Electric Solvo, which instantly softens and makes easily removable any coating.

S. C. JOHNSON & SON, Racine, Wisconsin

"The Wood Finishing Authorities"



ARE YOU LOOKING FOR A MACHINE THAT WILL

plane out of wind, surface straight or tapering, rabbet door frames, rabbet and face inside blinds, joint, bevel, gain, chamfer, plow, make glue joints, square up bed posts, table legs, newels, raise panels, either square, bevel or ogee, stick beads, work circular mouldings, etc., rip, cross cut, tenon, bore, rout, rabbet, joint and bead window blinds, work edge mouldings, etc.? If so, drop us a postal card, and we will send you a descriptive circular showing two views of our No. 62 Universal Wood Worker.

Write
209-229 WEST FRONT STREET
J. A. FAY & EGAN CO.
CINCINNATI, OHIO

No. 62. UNIVERSAL WOOD WORKER

per cubic foot for a wooden house, although there are plenty of houses which have been constructed as low as four and five cents per cubic foot. But the day of cheap lumber and cheap labor is past. A house which could have been erected at five cents per cubic foot ten years ago would cost to-day anywhere from seven to ten cents. The modern house owner expects a good many more comforts and luxuries to-day than were considered essential ten years ago, and the tendency of the equipment is to increase simply through the invention of more devices for catering to our home pleasures. It is, therefore, unwise to go back more than a year or two to make comparisons with houses. Again, building contractors frequently make mistakes and lose on a job, or owing to intense competition one will undertake to erect a new house at little more than cost. It is not good business policy to assume that these same conditions can be duplicated in your case. It is much wiser to figure out the cost on the present basis of labor conditions and prices for building materials than to draw conclusions from what has been done in the past unless all facts governing the case are well known.

Other things being equal, it is cheaper to build a larger house than a small one. That is, with the same interior finish and equipment, a house of forty thousand cubic feet would be relatively cheaper per cubic foot than another containing only twenty thousand cubic feet. But usually the larger the house the finer the interior finish, and if things are carried out on the same generous scale there is no reduction in the cost per cubic contents.

In estimating on a small but comfortable home the plumbing can best be considered by the number of fixtures. A fair price for each fixture is forty dollars to sixty dollars, but the cost may easily run up to seventy-five dollars to one hundred dollars. A house with six fixtures, three in the bath, one in the kitchen sink, one in the laundry, and one in a dressing-room, should have an allowance of about three hundred dollars, or fifty dollars a fixture, which means good, sanitary, open plumbing. If fancy bowls and equipments are demanded fifty dollars a fixture will not be enough, and all above this price should be added to the general snap estimate.

The heating plant is likewise a variable quantity. Architects usually allow one hundred and fifty dollars to two hundred dollars for the furnace plant in a house costing upward of three thousand five hundred dollars to five thousand dollars, and from three hundred and fifty dollars to five hundred dollars for a steam or hot-water plant. The larger the house the more expensive must the heating plant be. Each extra register or radiator increases the cost. Fancy registers and radiators have no limit in price, and if one wishes to be extravagant in this direction the "snap estimate" must be increased to cover the extra cost. Steam heating is generally estimated to cost about fifty per cent. more than dry-air furnace, and hot-water system twenty per cent. more than steam. The indirect system of either hot water or steam is the most expensive, and is generally fifty per cent. more in cost than direct systems.

Gas piping and gas fixtures, electric lights and wiring of the house for current are all stumbling blocks for the amateur house builder. While gas may be piped at one dollar to one dollar and fifty cents per outlet, it is simple and easy for one to spend ten times this sum on chandeliers and side brackets, even without the globes and candles. Electricity can be installed for the ordinary comfortable home at the rate of one dollar and fifty cents per outlet, but ten dollars to fifteen dollars are frequently paid for fancy lamps and lighting fixtures. All such fancy work

must come into consideration in the final estimate. Anything above the standard cost per outlet should be added to the cost of the house as obtained either by cubical contents or by the square foot.

Fancy doors, colored and leaded glass, and screens for windows and doorways are little extra items which play a tragic part in the life of many house builders. Doors cost all the way from one dollar and twenty-five cents to fifty dollars, and they come in plain pine and cypress wood to fancy oak and mahogany. One must use judgment in selecting the wood and the amount of fancy work on them. Leaded and colored glass cost from seventy-five cents per square foot up to almost any price desired. Screens for windows may cost from one dollar per window up to several dollars, and screen doors from two dollars to ten dollars. Wooden fretwork and friezes are extra items which run from a dollar or two per square foot up to ten dollars.

GARDEN WORK ABOUT THE HOME

(*Continued from page 40*)

Cultivation should go hand in hand with pruning. Do not expect the heading back to be all sufficient, but feed the tree better at the roots. This may be done by application of manure, ground bone, ashes, lime or nitrate of soda applied in proper quantity, or new soil may be put around the tree. It all depends upon the tree whether it is advisable to dig up the sod and actually cultivate the earth about the roots. An old orchard should in most cases be let alone. A little heading in may be done and a little thinning, but if it is very old it would pay better to plant a new orchard for fruit and keep the old one for its picturesque beauty.

What would an old orchard be if there were no holes for bluebirds, woodpeckers and high-holes to nest in? And no high branches to rock the orioles in their bassinette?

Professor Sargent's careful pruning has saved the Washington Elm in Cambridge, and has doubtless lengthened the life of the Waverly Oaks. They are the best examples I know of the rejuvenescence of old trees.

Pruning can be done at any season except early spring, but the best time is autumn or winter.

It is difficult to work when the leaves are on, and the work cannot be done so well then. Deciduous trees that have been growing close together, as in a wood, are often too weak to stand before the gales of winter if they are deprived of the protection and support of their neighbors, so if it is desirable to thin the woods, the trees which are left standing should be headed back. This reduces the strain on the roots, which will afterward grow stronger as the top grows larger. Pruning such a tree, too, makes the adventitious buds on the trunk grow so that the tree is soon clothed to the ground and begins to assume the shape and character of a tree which has always grown in the open.

Young trees should be examined every year and their defects corrected on the principle of "a stitch in time."

WINTER PROTECTION

H. L., Orange County.—The protection of hardy plants and shrubs in winter is often neglected to the serious injury of many of them, but it is not a difficult thing to do.

It is best not to put on anything in the way of protection until the ground is really frozen. It is not necessary before that and as the object of most protection is not to keep the ground from freezing, but to keep it from freezing *and*

Copyright 1908 by Life Pub. Co.

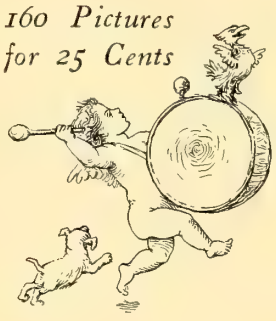
HER CHOICE

Smile, if ye will,
But some heart-strings
Are closest linked
With simplest things.

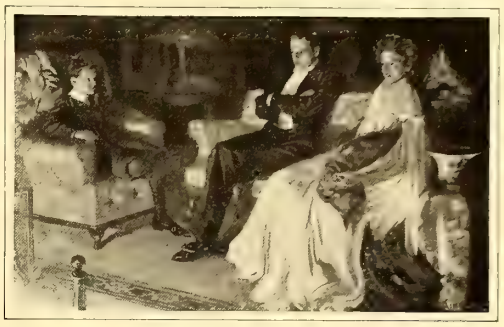
India Print in Sepia, 22 *by* 18 *in.* $2.00

Always a Welcome Gift

160 Pictures for 25 Cents



Copyright 1908 by Life Pub. Co.



THEIR DILEMMA

IF THEY MAKE IT UNPLEASANT FOR HIM HE WILL STAY OUT OF SPITE. IF THEY ARE NICE TO HIM HE WON'T WANT TO GO

India Print, 22 *by* 18 *in.* $2.00

Copyright 1908 by Life Pub. Co.

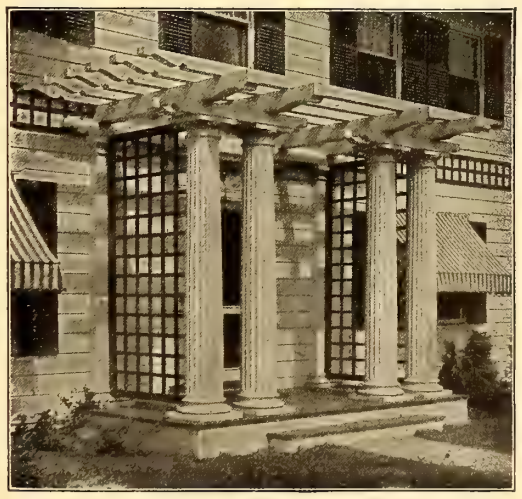
ANY LUCK, SIR?

Photo-gravure, 16½ *by* 13 *in.* 50 *cents*

Beautify your home with cheerful things. On receipt of twenty-five cents, we will send you the richly illustrated catalogue of LIFE'S PRINTS containing 160 reproductions of these most artistic and pleasure-giving pictures.

LIFE PUBLISHING CO.
40 West 31st Street,
New York

The prints described, whose prices are given, are PHOTO-GRAVURES of the highest possible quality and finish. In their production neither care nor expense has been spared to attain the very best artistic results.



KOLL'S PATENT
Lock-Joint Columns

Suitable for Pergolas, Porches or Interior Use are made exclusively by

HARTMANN-SANDERS COMPANY

Elston and Webster Avenues, CHICAGO, ILL. Eastern Office, 1123 Broadway, NEW YORK

Send for Catalogue A-19 of Columns, or A-29 of Sun-dials, Pedestals, etc.

Fresh-air heating

All fathers and mothers agree that if any of the family deserve or need a room that is just right to sleep in and to play in, it is the children. It means so much to their futures to surround their youth with the pure and healthful conditions which come from well-warmed and ventilated rooms.

AMERICAN RADIATORS & IDEAL BOILERS for Hot-Water and Low-Pressure Steam Heating warm the air without robbing it of its purity. There is no scorched air, no ash-dust, no coal-gases, or cellar-gases to work injury to the health, as arises from the use of old-fashioned heating methods.

In many cities and in some states the law now compels that all newly built schools shall be warmed and ventilated by Steam or Hot Water. If your child is thus wisely, sanitarily protected in school, why not yourself adopt this right way of heating your home, since the prices are now so reasonable, and the outfits can so simply be put into homes already built?

IDEAL Boilers and AMERICAN Radiators are a substantial paying investment, as they will outlast the building. Their purchase will increase the sales and rental value of the building, and they will soon repay their cost in savings of fuel, labor, repairs, and in the lessened house-cleaning and wear on carpets and furnishings.

A No. 020 IDEAL Boiler and 262 ft. of 38-in. AMERICAN Radiators, costing the owner $185, were used to Steam heat this cottage, at which price the goods can be bought of any reputable, competent Fitter. This did not include cost of labor, pipe, valves, freight, etc., which installation is extra and varies according to climatic and other conditions.

Write *today* for valuable book (free). Five months of cold weather still ahead! Sales Offices and Warehouses throughout America and Europe.

DEPT. 6 AMERICAN RADIATOR COMPANY CHICAGO

IDEAL IDEAL

THE GORTON QUICK-OPENING RADIATOR VALVE

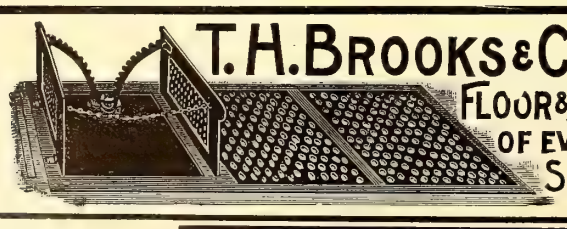
FOR LOW PRESSURE STEAM, VAPOR OR VACUUM SYSTEMS OF HEATING

IT SAVES COAL

Send for Circular and Prices

GORTON & LIDGERWOOD CO.

96 LIBERTY STREET, NEW YORK



T. H. BROOKS & CO. CLEVELAND, O.

FLOOR & SIDEWALK LIGHTS. OF EVERY DESCRIPTION. SEND FOR CATALOGUE.

Our well-equipped Book Department is prepared to recommend & supply MUNN & CO.

BOOKS

Relating to Architecture, Ceramics, Decoration, Rugs, Furniture, etc. :: ::

NEW YORK

thawing, it is just as well to put the protecting material on after the ground is frozen.

Strawberry plants do not suffer from the cold, but from heaving, and all they need is a light covering of straw, pine needles, or the old bean and pea stalks from the vegetable garden.

Anything which makes the snow drift in and stay is good because there is no protection equal to that of snow.

Deciduous shrubs and trees are better without protection, as it serves as a hiding place for mice which sometimes gnaw off all the bark for a space of three or four inches above the ground.

Rhododendrons and other broad-leaved evergreens should have a heavy mulch of leaves every autumn. It is better not to rake the leaves off in the spring, but to allow them to rot and make more good soil. As a summer mulch to keep the ground cool and moist in a dry time they are very desirable.

The protection for bulbs varies according to their hardiness. Tender ones should have covering enough to keep the ground from freezing and others like the narcissi will do very well without anything. The covering must be taken off the bulbs early in the spring or their growth will be forced and weakly.

The flower garden needs protection, but the operation must be varied more or less to suit each plant. Things which have green leaves and a crown above must not be covered too deeply or they will rot. A light covering of strawey manure to keep the ground shaded is sufficient. Paeonies, platycodon and large-rooted plants of that sort may be given a heavy dressing of manure which can be forked in, in the spring. For small herbaceous plants pine needles are the best protection.

THE SASSAFRAS

S. W.—The Sassafras is another neglected tree, partly, I think, because it is difficult to transplant and hard to manage in the nursery. It grows rapidly while young and can be collected in the fields without great loss when two or three feet high.

The typical shape of a good specimen is broadly oviform with the large end at the bottom. Other specimens under different conditions may be tall and narrow.

The leaves are large, soft, irregular in shape, sometimes ovate and entire and sometimes two or three lobed. The color is rather a dark green; the texture is not smooth and the modeling is bold.

In blossom it is one of our effective trees, because it blossoms early before the leaves, and the tree is covered with pure yellow which lasts a week or more. It is the most conspicuous tree in the landscape in April.

On young trees the branches have a finely furrowed bark that in color and texture is like corduroy.

The season's growth of twigs is a deep green, spotted as they grow older, and they are smooth and spring from the larger twigs without a joint, like the branches of a stag's antlers. They seem as if molded in clay and cast in bronze which has taken a beautiful patina. All parts of the tree are aromatic. even the cork-like reddish bark on an old tree has an enduring fragrance. The tender branches and the buds are mucilaginous and pleasant to eat.

Sassafras tea (a wonderful color) is made from the roots.

In the autumn the dark berries borne on a deep red fleshy stem attract the birds. The tree turns a good yellow, slightly bronzed.

The bare branches seen against the winter sky are like the delicate traceries and filigrees made by goldsmiths!

Build your House—your Stable—your Garage

Fireproof House of Terra Cotta Hollow Tile during construction.

The same house completed showing coating of Cement Stucco over walls.

Fireproof Stable of Terra Cotta Hollow Tile.

Fireproof Garage of Terra Cotta Hollow Tile.

Fireproof with Terra Cotta Hollow Tile

and have a *better building* from *every* standpoint than you can secure in any other way.

Read this page through—then ask for our book.

Besides the inestimable value of their being fireproof, such buildings are better than frame, brick-and-wood, or concrete-and-wood because they are of

Enduring Masonry Construction Throughout

By reason of the indestructibility of the material and their substantial construction, these houses

Cost Far Less for Maintenance and Repairs

than is the case with buildings of frame or brick-and-wood. Floors of wooden joist construction warp and crack. Floors of Fireproof Terra Cotta Hollow Tile endure for all time.

Exteriors of frame houses must be painted frequently, walls of Cement Coated Terra Cotta Hollow Tile, never. Walls of wood, stone, concrete or brick absorb, retain and carry to the interior of the house, the frost of Winter and heat of Summer. The air space in walls of Terra Cotta Hollow Tile furnishes complete insulation against atmospheric conditions, thereby reducing the cost of heating to a minimum, and buildings of this material compared with brick, frame, stone, concrete or a combination of all four are

Warmer in Winter—Cooler in Summer

Houses with walls of brick, stone, concrete or frame, must be "furred" or lined with wood to be plastered, and they carry sound vibrations and are subject to the penetration and ravages of vermin. Terra Cotta Hollow Tile Houses require no furring, the plastering being applied direct to the Hollow Tile, and they are

Moisture Proof—Sound Proof—Vermin Proof

When it is considered that a residence with all these advantages and completely Fireproof can be built at as low cost as one of brick, brick-and-wood, stone-and-wood, concrete, or frame, is it not worth while to talk with your architect about this modern construction?

Ask our nearest office for a copy of this book.

All competent architects are familiar with methods of designing and building houses of Terra Cotta Hollow Tile. A copy of our book showing how houses are constructed of Fireproof Terra Cotta Hollow Tile will be sent upon request.

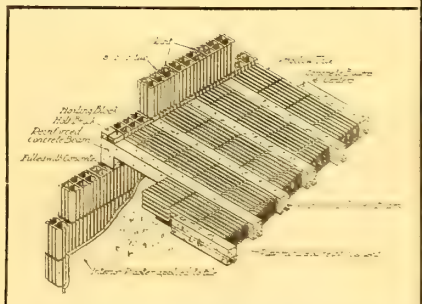
National Fire Proofing Company

Manufacturers of Terra Cotta Hollow Tile

Contractors for Construction of Fireproof Buildings. The largest Company in the world devoted exclusively to the business of fireproof construction. Capital—Twelve and one-half Million Dollars.

Pittsburgh, Fulton Bldg.
Philadelphia, Land Title Bldg.
Washington, D. C., Colorado Bldg.
Boston, Old South Bldg.
Cincinnati, Union Trust Bldg.
St. Louis, Victoria Bldg.
San Francisco, Monadnock Bldg.
Chicago, Com'l National Bank Bldg.
New York, Flatiron Bldg.
Minneapolis, Lumber Exchange
Cleveland, Cuyahoga Bldg.
Los Angeles, Union Trust Bldg.
Toronto, Can., Traders Bank Bldg.
London, Eng., 27 Chancery Lane

26 Factories throughout the United States.



Typical fireproof floor and wall construction of Terra Cotta Hollow Tile.

The Sunshine Belt to the Orient

Calm seas and Summer skies
A one day's stop at beautiful Hawaii
The maximum of speed and luxury

These are the reasons that make the Pacific Mail the ideal route to the Orient

From **SAN FRANCISCO** to **HAWAII, JAPAN, CHINA** and the **PHILIPPINES**

Rates and information at any railroad ticket agent or from

PACIFIC MAIL S. S. CO., SAN FRANCISCO, CAL.

R. P. SCHWERIN, *Vice Pres. and Genl. Mgr.*

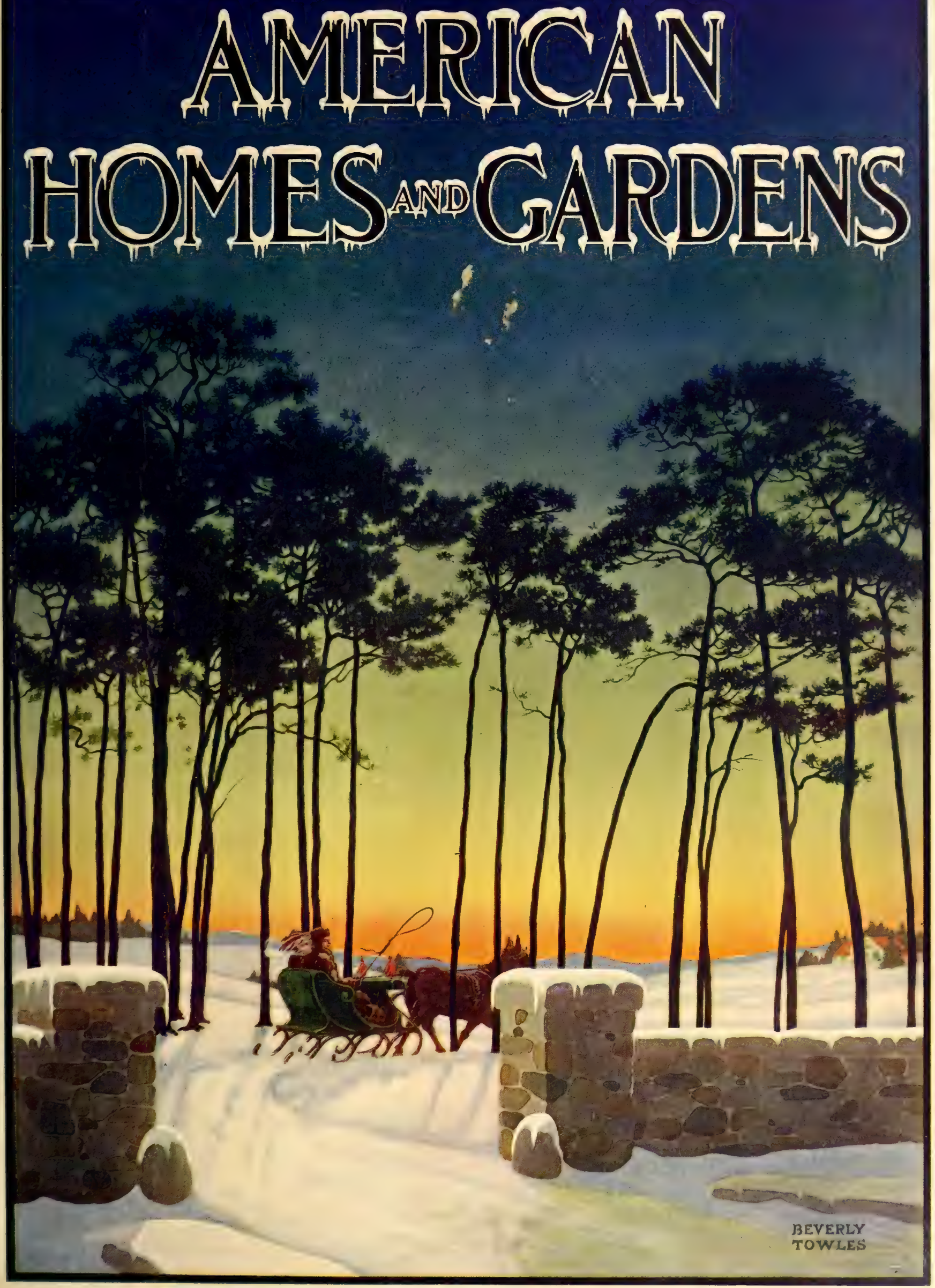
CHICAGO: 120 Jackson Boulevard
NEW YORK: 1 Broadway—349 Broadway
WASHINGTON: 511 Pennsylvania Avenue
ST. LOUIS: 903 Olive Street
BALTIMORE: Baltimore and Hanover

BOSTON: 170 Washington Street
SYRACUSE: 212 West Washington Street
PHILADELPHIA: 632 Chestnut Street
HAMBURG (Germany): Amerika Haus, Ferdinandstrasse
LONDON (England): 49 Leadenhall Street, E. C.
22 Cockspur Street, S. W.

FNA
7100
A512
Hort.

Vol. VI FEBRUARY, 1909 No. 2

AMERICAN HOMES AND GARDENS



$3.00 A YEAR MUNN & COMPANY, Publishers PRICE, 25 CENTS

The "Royal" Chair

"The Push Button Kind"

is the modern Morris chair, most graceful in design, made of best materials by superior workmanship, and especially pleasing because of the exclusive, patented "Royal" push button.

"Push the Button-and Rest"

In no other chair are such comfort and convenience found combined. The "Royal" has no rod to fall out—you don't have to get up out of the chair to adjust the back. By simply pushing the little button, just under the right arm of the chair, you can move the back either up or down, as far as desired, to any of nine comfortable and restful positions.

Made with or without footrest.

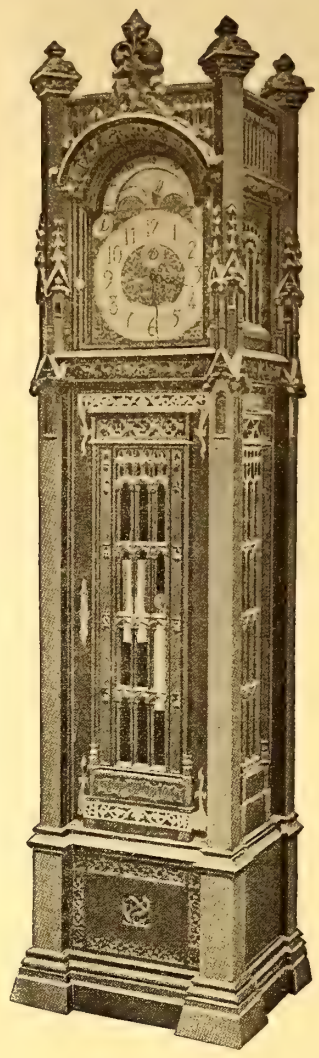
85 Styles
Prices from
$10 to $50

Footrest Slides Back

Costs No More Than the Old-Fashioned Kind

"Royal" Chairs are sold by dealers nearly everywhere. Oak or mahogany, upholstered in fabric or leather or having loose cushions, with or without footrest. Write to-day for fully illustrated booklet We will tell you where to see a "Royal" demonstrated. **200,000 now in use.**

ROYAL CHAIR CO., 128 CHICAGO AVE., STURGIS, MICHIGAN



HALL CLOCKS

The most useful and ornamental article you can have in your home is a fine HALL CLOCK. We make many styles and kinds, with or without chimes.

The "Banjo," which is so popular for dining-room and library, is a most satisfactory clock.

We also make a full line of Marble Clocks and Regulators.

If your local dealer does not sell our line, send direct for new illustrated catalogue.

Waltham Clock Company
Waltham, Mass.

¶ Americans are now building more beautiful houses and are decorating and furnishing them with greater care and in better taste than ever before.

¶ The most potent single influence working for higher standards in architecture and decoration is

The Architectural Record

¶ If you are interested in building a building of any sort, you will be interested in The Architectural Record.

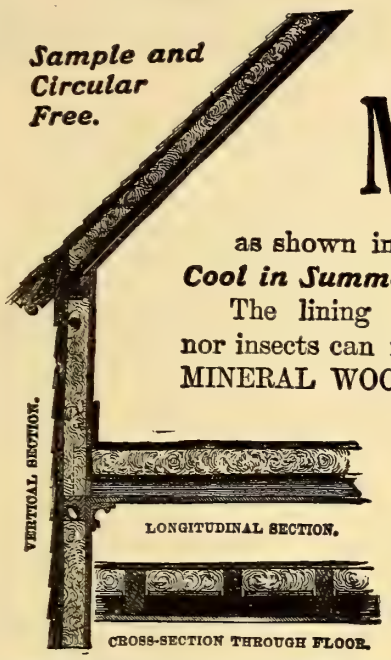
Send for a Sample Copy—Free.

THE ARCHITECTURAL RECORD COMPANY

11 to 15 East 24th Street, NEW YORK 511 Monadnock Building, CHICAGO

SMITHSONIAN
AUG 12 1985
LIBRARIES

Sample and Circular Free.



A House Lined with

Mineral Wool

as shown in these sections, is ***Warm in Winter, Cool in Summer,*** and is thoroughly DEAFENED.

The lining is vermin-proof; neither rats, mice, nor insects can make their way through or live in it. MINERAL WOOL checks the spread of fire and keeps out dampness.

Correspondence Solicited.

U. S. Mineral Wool Co.

140 Cedar St., NEW YORK CITY.

AMONG the distinctive features of interior decorations found in many old mansions are the delicately wrought lighting fixtures in perfect harmony with their surroundings.

A Reproduction reflecting the same spirit is shown in the accompanying illustration.

THE ENOS COMPANY

Makers of Lighting Fixtures

OFFICE AND FACTORY: Seventh Ave. & 16th St.

SALESROOMS: 5 West 39th St.

NEW YORK

BOSTON *Bigelow, Kennard & Co.*
BALTIMORE *519 N. Charles Street*
PITTSBURG *G. P. Norton, 4th and Penn Streets*
ST. LOUIS *N. O. Nelson Mfg. Co.*
CHICAGO *W. K. Cowan & Co., 203 Michigan Boulevard*
SAN FRANCISCO *1748 California Street*
TORONTO *94 King Street, West*
SPOKANE *Cutter & Plummer, Inc.*
SEATTLE *Cox & Gleason, 1914 Second Ave.*

TRADE MARK.

Kitchen Showing Interlocking Rubber Tiling in Residence of Mr. Webb Horton, Middleton, N. Y.

INTERLOCKING RUBBER TILING

An Ideal Floor Covering for Court Houses, Banking Institutions, Churches, Hospitals, Libraries, Business Offices, Restaurants, Vestibules, Elevators, Kitchens, Laundries, Pantries, Bathrooms, Steamships and Floating Property generally.

We are the original manufacturers of Interlocking Rubber Tiling

NEW YORK BELTING & PACKING CO., Ltd.

91-93 Chambers Street, NEW YORK CITY

CHICAGO, ILL.: 150 Lake Street
ST. LOUIS, MO.: 218-220 Chestnut Street
PHILADELPHIA, PA.: 118-120 N. Eighth Street
SAN FRANCISCO, CAL.: E. 11th St. & 3d Ave., Oakland
BOSTON: 232 Summer Street
BALTIMORE, MD.: 114 W. Baltimore Street
BUFFALO, N. Y.: 600 Prudential Building
PITTSBURGH, PA.: 913-915 Liberty Avenue
SPOKANE, WASH.: 163 S. Lincoln Street

Do Your Sliding Doors Stick?

The Round Track

will prevent your sliding doors from jamming, binding or sticking in the ways. It will prevent the doors from jumping the track or getting out of order. This is what makes the

ALLITH

"Reliable" Parlor Door Hangers

the best on the market. They make the slide noiseless, are not affected by the sagging or warping of walls, floors or doors, and can be adjusted without removing strips or stops. If you are going to build a house or remodel your present one, put in sliding doors and hang them on Allith's "Reliable" Parlor Door Hangers. Every Allith Hanger is guaranteed to give complete satisfaction. Send us your name and address and the name of your architect, and get our latest catalog, with prices, etc., free of charge.

Allith Manufacturing Company
2119 West Taylor Street Chicago, Illinois

COULTER & WESTHOFF, Architects, Saranac Lake

Beautiful **Silver Gray** and **Moss Green, Italian Tile Red, Etc.**— These are the artistic colors produced on your **Bungalow** or **Cottage** by using

DEXTER BROTHERS' English Shingle Stains

No disagreeable odor.

Samples of colors on wood sent FREE

Dexter Bros. Co., 109 Broad St., Boston, Mass.

AGENTS: H. M. Hooker Co., 128 W. Washington St., Chicago; W. S. Hueston, 6 E. 30th St., New York; John D. S. Potts, 218 Race St., Philadelphia; W. W. Lawrence & Co., Pittsburg, Pa.; F. H. McDonald, 619 The Gilbert, Grand Rapids, Mich.; F. T. Crowe & Co., Seattle, Spokane, Tacoma, Wash., and Portland, Ore.; Klatt-Hirsch & Co., 113 Front St., San Francisco, Cal.

BURLINGTON Venetian and Sliding BLINDS

Venetian Blind for inside window and outdoor veranda. Any wood; any finish to match trim.

SCREENS AND SCREEN DOORS

¶ Equal 500 miles northward. Perfect privacy with doors and windows open. Darkness and breezes in sleeping rooms.

Sliding Blinds for inside use. Require no pockets. Any wood; any finish.

WRITE FOR OUR CATALOGUE, PRICE-LIST AND PROPOSITION TO YOU

BURLINGTON VENETIAN BLIND CO., 975 Lake St., Burlington, Vermont

IF YOU WISH TO SUBSCRIBE to only One Magazine, careful investigation will show you that the METROPOLITAN MAGAZINE

should be that one; so thoroughly American is it, so vital and so varied. If, however, you require several, we, as agents, are able to secure for you, as one of our patrons, what you wish, together with the METROPOLITAN, at wonderfully low rates. We venture to call to your attention a few of these combinations:

CLASS "A"	Reg. Price Per Year
American Magazine	$1.00
Children's Magazine	1.00
Cosmopolitan Magazine	1.00
Garden Magazine	1.00
Good Health	1.00
Uncle Remus's Home Magazine	1.00
National Food Magazine	1.00
*Woman's Home Companion	1.25

CLASS "B"	Reg. Price Per Year
Army and Navy Life	$1.50
House and Garden	3.00
Independent	2.00
Outing	3.00
Short Stories	1.50

CLASS "IV"	Reg. Price Per Year
Pacific Monthly	$1.50
Photo-Era	1.50
Travel	1.50
Technical World	1.50
World To-day	1.50

The METROPOLITAN and any one magazine in Class "A" for	$1.65
The METROPOLITAN and any two magazines in Class "A" for	$2.30
The METROPOLITAN and any three magazines in Class "A" for	$2.95
The METROPOLITAN and any one magazine in Class "A" and any one in Class "B" for	$3.00
The METROPOLITAN and one Class "A" and one Class "IV" for	$2.65
The METROPOLITAN and any one in Class "B" for	$2.35
The METROPOLITAN and any two in Class "B" for	$3.70
The METROPOLITAN and any one in Class "IV" for	$2.00

SPECIAL! METROPOLITAN, WORLD'S WORK AND DELINEATOR, $3.00

THE METROPOLITAN with		
	American Education	$2.00
	The Housekeeper and the Reliable Poultry Journal	1.70
	Lippincott's Magazine	2.75

SPECIAL! METROPOLITAN, WOMAN'S HOME COMPANION, McCLURE'S, $2.50

Any of the Publications in this list may be added at the price quoted.

CENTURY	$3.85
HARPER'S MONTHLY	3.50
LITERARY DIGEST	3.00
LADIES' HOME JOURNAL	1.50
MUNSEY'S	1.00
SCRIBNER'S	3.00
SATURDAY EVENING POST	1.50
YOUTH'S COMPANION	1.75

THE METROPOLITAN EVERYBODY'S THE DELINEATOR	$2.50	THE METROPOLITAN WORLD'S WORK EVERYBODY'S	$3.25

*Twenty-five cents must be added to all clubs containing Woman's Home Companion if ordered after February 1st, 1909

On account of our special arrangement with the publishers of the various magazines, we are in a position to quote prices to you far below those which would ordinarily be given to you, so if you do not find in the above clubbing offers the combination which you desire, write to us exactly what you wish and we will quote you the lowest possible price for such a combination.

METROPOLITAN MAGAZINE AGENCY

Dept. A, 7 WEST 29th STREET, NEW YORK CITY

THIS OFFER CANCELS AND TAKES PRECEDENCE OVER ALL PREVIOUS OFFERS MADE BY US

5 Grapevines $1.00

Strong, Hardy, Three-year-old Vines

Any five of the following well-known varieties:
(Red)—**Brighton, Delaware, Lindley.**
(White)—**Niagara, Diamond, Pocklington.**
(Black)—**Concord, Worden, Moore's Early, Wilder.**

These vines will grow anywhere and will bear the year after planting. We guarantee them to be as represented or money refunded. We also offer 10 strong, hardy, two-year-old vines for $1.00. This is a remarkable collection of grapevines at an exceedingly low price. Order now, vines will be shipped proper time to plant.

With every order we send our valuable book how to plant, cultivate and prune. Grapes are easily grown and should be in every garden.

T. S. HUBBARD COMPANY
Grape Vine Specialists FREDONIA, N. Y.
Established 42 Years

Van Dorn Iron Works Co.

PRISON, HOUSE & STABLE WORK

JOIST HANGERS
LAWN FURNITURE
FENCING, ETC.

CLEVELAND, OHIO

GREGORY'S SEEDS

If you want to be sure of a growing crop, plant Gregory's Seeds. **Always sold under three warrants.** For over fifty years they have been the standard for purity and reliability.

Gregory's Seed Book—FREE

to everyone who writes for a copy. It is full of practical instruction. One of the most valuable books for farmers and gardeners ever given away.

GREGORY'S SEED CATALOGUE FOR 1909

J. J. H. GREGORY & SON
Marblehead, Mass.

PREVENTS DRAFTS, DUST AND WINDOW RATTLING.

IVES' PATENT Window Stop Adjuster.

PATENTED.

The only Stop Adjuster made from one piece of metal with solid ribs and heavy bed that will not cup, turn or bend in tightening the screw. Manufactured only by **The H. B. IVES CO., New Haven, Conn., U. S. A.** (Fifty-page Catalogue Mailed Free.)

"To have your roof last—
Use Ruberoid Roofing first"

It's the Wear

you get out of a roofing that proves its economy and its value — not the price you pay per roll.

Cheap roofings are dear at any price. They cost ten times more for repairs than you could possibly save on their original cost — and they don't last.

RUBEROID

TRADE MARK REG. U. S. PAT. OFFICE

ROOFING

is the most economical roofing you can use because it will outlast any other. It is moderate in price, costs less than metal or shingles, and is weatherproof, waterproof and fire-resisting.

It is made in

Red, Brown, Green and Slate Color

and is ***the only*** permanent roofing with permanent colors.

Write for Samples and Booklet No. 15

THE STANDARD PAINT COMPANY

100 WILLIAM STREET
NEW YORK

Chicago
Kansas City
Boston
Philadelphia
Memphis
Atlanta

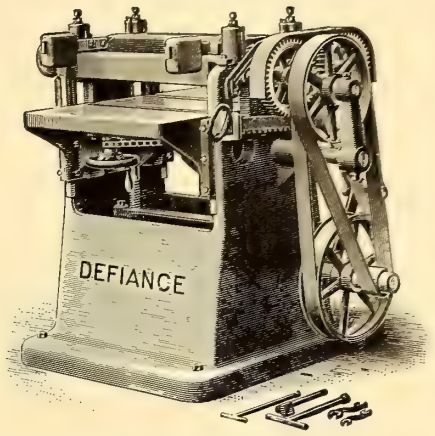
"DEFIANCE"

Wood-Working Machinery

For Pattern Shops and General Wood-Work

Invented & Built by

THE DEFIANCE MACHINE WORKS
DEFIANCE, OHIO



24-Inch Single Surface Planer

TERRA COTTA & POTTERY

For Garden and Home

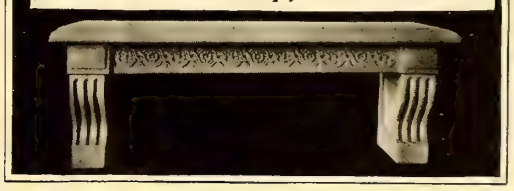
Flower Pots — Sun Dials
Jardinieres — Statuary
Benches — Flower Boxes
Fountains — Ferneries

Strength Durability and Beauty

Artistic designs and superior workmanship, with carefully selected and properly burned clay, assure individuality in all Galloway productions. The kind that add character to your house and grounds.

Write for book "Garden and House Terra Cotta," illustrated with copper engravings of choice examples of the potter's art.

William Galloway, 3222 WALNUT STREET PHILADELPHIA



"REECO" ELECTRIC PUMP

Goes with Your Electric Light (or without)

We are now installing, just as fast as our manufacturing facilities can supply the demand, our new electric pumps for private water supply. They range in size from a capacity sufficient for the requirements of the largest apartment-house, or stock-farm, to the minimum, which suffices for the needs of the country cottage. Ease and economy of operation place these pumps in a class by themselves. The absence of fire or fuel does away with personal care, making their action automatic, while their construction is such, that they are operated by very little power; you simply attach a wire to the source of supply for your electric light, and the pressing of a button starts and stops your electric pump. Your pump may work just as long, and not a moment longer, than may be required, hence there is no waste of power. These pumps may be installed wherever a trolley line runs and, of course, wherever there is a public or private electric lighting plant. In point of simplicity, convenience, and labor-saving qualities, the "Reeco" Electric Pump is a marvel; it is a wonderful demonstration of one of the many and varied applications of electricity to practical every-day uses. Is the electric light more convenient in your home than the lamp or candle? You will find that the "Reeco" Electric Pump bears the same relation to the hand pump and "old oaken bucket," in its convenience and the additional household comfort which it supplies.

Be sure that the name you purchase. This **"RECCO"-ELECTRIC** name protects you against worthless imitations. When so situated that you cannot personally inspect the pump before ordering, write to our nearest office (see list below) for the name of a reputable dealer in your locality, who will sell you only the genuine pump

RIDER-ERICSSON ENGINE CO.

Write for Catalogue E

35 Warren Street, New York
239 Franklin Street, Boston
40 Dearborn Street, Chicago
40 North 7th Street, Philadelphia
234 Craig Street West, Montreal, P. Q.
22 Pitt Street, Sydney, N. S. W.

THE **most modern, and best illuminating** and **cooking** service for isolated homes and institutions, is furnished by the **CLIMAX GAS MACHINE.**

Apparatus furnished on **TRIAL** under a **guarantee to be satisfactory** and in advance of all other methods.

Cooks, heats water for bath and culinary purposes, heats individual rooms between seasons—drives pumping or power engine in most efficient and economical manner — also makes brilliant illumination. **IF MACHINE DOES NOT MEET YOUR EXPECTATIONS, FIRE IT BACK.**

Send for Catalogue and Proposition.

Low Price — Better than City Gas or Electricity and at Less Cost.
Liberal Terms

C. M. KEMP MFG. CO.
405 to 413 E. Oliver Street, Baltimore, Md.

THE KEWANEE SYSTEM OF WATER SUPPLY

A Frozen Elevated Tank

This illustration is reproduced from an actual photograph of a frozen elevated tank at Libertyville, Ill., owned by the C. & M. Electric R. R. Co. From the following letter by A. W. Litchfield, it will be seen that an elevated tank exposed to the extreme cold of winter, will freeze and an attempt to thaw it out, only adds to its disadvantages.

"Enclosed you will find a photograph of the third tank erected for the C. & M. Electric R. R. at Libertyville in three years. You will see how the tank is covered with ice and all frozen up. The first tank was destroyed by fire, by trying to thaw it out and it was burned to the ground."

This undesirable condition can be entirely avoided. There is a water supply system in which the tank cannot freeze, leak, overflow or collapse. That system is

The Kewanee System of Water Supply

In the Kewanee System, the tank is buried in the **ground** or located in the **cellar.** It rests on solid ground where it can do no damage and it is not exposed to extremes in weather. Water from your own well, cistern or other source, is pumped into the Kewanee Tank; and then the water is delivered to the fixtures and hydrants by **air pressure.**

The C. & M. Electric R. R. Co. mentioned above is now using four Kewanee Systems, and these plants are giving satisfactory service.

There are over 9000 Kewanee Systems in successful operation. These plants are supplying water for country and suburban homes, public institutions, schools, country clubs, hotels, apartment buildings, villages, etc.

The Kewanee System is the **original** water supply system, involving the use of **air pressure** instead of gravity pressure. There are imitations now—avoid them. Get the genuine and you will take no chances—we guarantee that. Look for our trade mark and name plates on tank and pumping machinery.

No charge for expert engineering service. Let us help you solve your water supply problem. Write for our sixty-four page illustrated catalog No. 38 It is free.

Kewanee Water Supply Co., Kewanee, Ill.

1566 Hudson Terminal Building, 50 Church St., New York City.
710 Diamond Bank Building, Pittsburg, Pa.
1212 Marquette Building, Chicago.

Accurate information regarding THE WORLD'S INDUSTRIAL PROGRESS is a necessity of MODERN BUSINESS LIFE, as well as a subject of ABSORBING INTEREST for every thinking man and woman.

For nearly sixty-five years the

Scientific American

has been the most widely quoted authority on all matters relating to the progress made in the fields of discovery, invention and scientific news.

Free from dry technicalities, it tells the story of the WORLD'S PROGRESS in a fascinating and practical manner, which makes its weekly visits welcome to the entire family. It is unique among periodical literature because it contains authoritative information which cannot be obtained from any other source.

Subscription price, $3.00 per year.

The Season's Best Club Combinations

Scientific American or American Homes and Gardens	$3.00	$4.45
Review of Reviews	3.00	
	$6.00	
Scientific American or American Homes and Gardens	$3.00	$6.80
Review of Reviews	3.00	
World's Work	3.00	
Everybody's Magazine	1.50	
	$10.50	
Scientific American or American Homes and Gardens	$3.00	$5.35
Everybody's Magazine	1.50	
World's Work	3.00	
	$7.50	
Scientific American or American Homes and Gardens	$3.00	$5.35
McClure's Magazine	1.50	
Review of Reviews	3.00	
	$7.50	
Scientific American or American Homes and Gardens	$3.00	$5.10
World's Work	3.00	
Delineator	1.00	
	$7.00	
Scientific American or American Homes and Gardens	$3.00	$4.60
McClure's Magazine	1.50	
Woman's Home Companion	1.25	
	$5.75	

After February 1st, 1909, 25c. must be added to combinations including Woman's Home Companion.

MUNN & CO., 361 Broadway, New York City

MAKING A COUNTRY HOME

By E. P. Powell

I. THE FLOWERS

THE tide that is moving out of the city can not help making many mistakes, by investing in property that they can not subdue, and in planting unwisely at the outset. A few acres to start with will always be better than a farm of the old sort. Intensive farming will make more from five acres than extensive farming from fifty. However, I do not propose to handle this question of profit so much as the initial work in making a home. I have seen a good deal of trouble and dissatisfaction from undertaking too much. I will use special caution in the way of providing lists of fruits and flowers for those who are creating just "homes," and nothing else.

We may as well start with the flowers, and go on in later articles to the fruit garden and orchard. We want such flowers as can be grown easily, and will most quickly make the home cheerful. For succession and for beauty, without too much work, I would plant the following six sorts of flowers:

(1) I would have all the tulips I could afford to get, although if one buys one hundred sorts they can be multiplied so rapidly that within a few years he may have them by the hundred. My own method of growing tulips is to thrust them into the strawberry rows, about four inches deep, and let them take care of themselves. They will send up their flowers magnificently in April and May, and get out of the way before the strawberries begin to develop. They will not weaken the soil nor do any harm, but when you come to pick the berries there will be nothing left but some dried stalks.

(2) A country home needs a large array of easily grown lilies. The madonna or candidum lily is best of all, both for its superb fragrance and its multitudinous blossoms. It begins to open early in June, and continues for most of that month. Almost as easily grown are the lancifolium or Japanese lilies. Remember that I am selecting only those things that will cause little work and give great satisfaction. These two lilies will grow in any garden soil, and having been planted need not be disturbed for three or four years—only do not put any manure around the roots. The old tiger lily, the single variety (and not the double, which is ugly), is so easily grown in almost any soil that it should be counted into this list. It really is a very refined flower, although very old-fashioned. The canadense or meadow lily is another that does marvelously well with very little care. You can find them in low meadows, and near water courses, frequently very plentifully. Plant them quite deep, at least six or eight inches, and they will make a fine growth and abundant bloom. Neglect and hard usage will not kill out these varieties. If you have a shady place where the soil is deep and loamy you can grow without any special care the gold banded or auratum. Keep away manure and plant not less than ten inches deep; then let them alone. Most of our lilies only want the grass and weeds kept away from them.

(3) Roses everybody must have, and I do not see why anybody may not grow a lot of them. Some of the very best ask for little care, only give them a-plenty to eat. Roses want rich soil. Always buy those that grow on their own roots, without grafting. I could make out a list of fifty or one hundred sorts, and not step over the line of hardy, thrifty plants, but you do not want anything of this kind. A dozen to start with will be quite enough. I would make my list begin with

Killarney, Richmond, General MacArthur, the Cochet roses, the Soupert roses, Balduin, Augusta Victoria, and President Carnot. If I were in Florida I should let nothing take precedence of Marechal Neil, and now in my garden there hardly anything surpasses Gainsborough and Etoile de France, but in the North I do not get from these as good results. Where the climate is very severe one must select his roses from the hybrid perpetuals and the hybrid teas. Out of these select General Jacqueminot, Jubilee, Magna Charta, Paul Neyron, Mrs. Laing, Clio, Ulrich Brunner. Over your porch Climbing Meteor, Mrs. Robert Peary, and Clothilde Soupert will be enough to start with, and they are all superb. Besides a much larger planting of select roses I find that I can not get on happily without some of the old-fashioned sorts. These can be planted near your fences, or constitute a hedge by your currant patch. Get the damask and the cabbage and the Scotch at any rate.

(4) Another plant that you may lay in freely is the hardly phlox. It begins to blossom just as the roses are through, and the profusion of bloom is as delightful as the fragrance. New seedlings will come up every year, and if you will save these, or some of them, you will have in a few years hundreds of novelties, of great beauty, and all entirely hardy. The phlox blossoms all through July and August and September. If you will cut down the stalks after blooming others will come up and blossom still later. It is a royal everybody's flower; it will do its best in rather poor soil, only it wants plenty of water; and in dry seasons, is not conspicuously beautiful. For additional perennials you will find perennial larkspur very satisfactory. It takes pretty good care of itself, does not like too much shade and sends up splendid stalks of richest blue, from three to five feet high. I am tempted to add clove pinks, although these, while hardy, are inclined to give out for causes you can not discover. But is there anything finer than a bunch of clove pinks or clove carnations, either in the hand or in the room? If you have a brook along which you can grow watercress, sow with it some forget-me-not. This darling blue flower has just the right name. A little frail plant has persisted in coming up in my garden for over half a century. It is a bunch of spray with delicate flowers, and called fumatory. Get it into your grounds if you can. It is the very best basis for a dish bouquet I have ever seen. I shall step over my limits a little in adding sweet williams, for they do make a good deal of trouble if grown in beds. But sow the very best seed in your lawns under shrubs, and the sweet william will become a very persistent summer visitor.

(5) Annuals you cannot bother with at the outset, and yet there are a few of them that must be included. First of all and fairest are the sweet peas. I will tell you how they make the least possible trouble and are the surest to respond. Plant them very early in the spring in trenches five inches deep, in rich garden soil, and, as they grow, gradually fill up around them with rich compost (not fresh manure.) There are new sorts sent out every year, and I advise you to select a half dozen of the best new ones to start with, then add a few of the very best each year. The easiest way that I have found for training sweet peas is on wire trellis or chicken wire. Something that is five or six feet high at the least. Then pick the flowers as fast as they come if you want them to keep on coming. Give away huge bunches, and thousands more will appear. The nasturtium, or tropeolum, is my hobby. While most flowers like rich soil this one does best on the poorest. If too highly fed it runs to vine and not to flower. It is not only one of the most floriferous plants in existence, but

"Standard"
(TRADE MARK)
Baths and Lavatories

The enduring permanency of these beautiful fixtures spells an end to bathroom annoyances. They are, everywhere, the preferred sanitary equipment of practical, health-loving people.

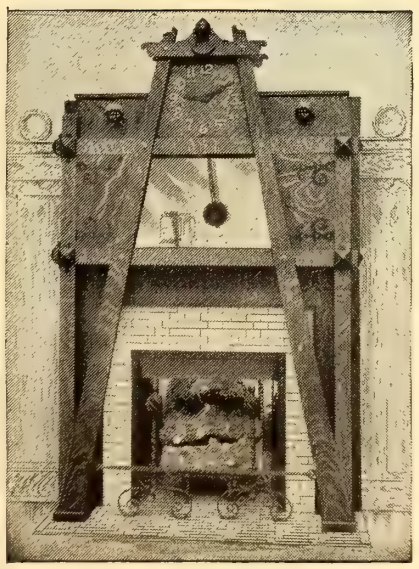
Send for Our Book

Our beautifully illustrated book, "Modern Bathrooms," will show you how most economically to equip your bathroom, in such a way, as to materially increase the actual cash value of your house, at the same time making of it a room as permanently healthful and invitingly attractive as any other in your home. Write for your copy today.

Enclose six cents postage and give us name of your architect and plumber (if selected.)

Address, Standard Sanitary Mfg. Co. Dept. 23. Pittsburgh, Pa., U. S. A.

Offices and showrooms in New York: "Standard" Building, 35-37 West 31st Street.
Louisville: 325-329 West Main Street. Pittsburgh: New Orleans: Cor. Baronne & St. Joseph Sts.
London, Eng.: 22 Holborn Viaduct, E. C. 949 Penn Ave. Cleveland: 648-652 Huron Road, S. E.



Artistic Mantels

¶ Our Catalogues contain 130 designs, including Mission, Colonial, White, Mahogany and Oak. Everything, from the very cheapest to the best.

¶ Fireplace Hardware and Tiling of every description.

¶ Catalogue and Special Designs sent on receipt of 25c. in postage.

The Geo. W. Clark Co.

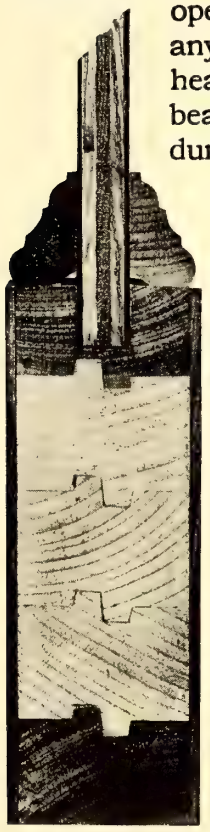
Unity Building Chicago, Ill.
Clark Building Jacksonville, Fla.
Factory, Knoxville, Tenn.

Look Into The Door

Did you ever stop to think just why some doors stick, warp, shrink, open at the joints and are always causing trouble? You would not buy a watch without looking at the works. The works of a door are just as important to its performance as the works of a watch.

Morgan Doors

are beautiful and durable—they are constructed so that they will never warp, twist, open at the joints, stick or cause any door trouble—they are not heavy or unwieldly—they are beautiful on the outside and have durability built into them.



Look at the works of a Morgan Door—the illustration shown is a cross section of a one and three-quarters inch door, flush molded, two sides with one-half inch, five-ply panel. Note the several layers with the grain running cross-wise—these layers after all moisture has been eliminated are glued together with the very best veneer glue under powerful hydraulic pressure. This makes shrinking, warping or swelling impossible.

Morgan Doors are light, remarkably strong, absolutely perfect in construction and express substantial refinement in every line. They are veneered in all varieties of hard wood, birch, plain or quarter sawed red or white oak, brown ash, mahogany, etc.

Each Morgan Door is stamped "MORGAN" as a guarantee of quality, style, durability and satisfaction. In our new book "The Door Beautiful" we show Morgan Doors in their natural color and tell you why they are the best and cheapest doors for permanent satisfaction in any kind of building.

Architects: Descriptive details of Morgan Doors may be found in Sweet's index, pages 678 and 679.

Morgan Company, Dept. A, Oshkosh, Wisconsin.

Morgan Sash and Door Company, Chicago, Ill. Morgan Company, Oshkosh, Wis.
Morgan Company, Baltimore, Md.

STEEL CEILINGS

For Effectively Decorating All Kinds of Rooms

YOU CAN GET THEM IN

"BERGER'S" Classik

Appropriate Designs for Residences, Business Rooms, Auditoriums, Etc.

¶ Largest and most complete line of artistic STEEL Ceilings in existence. Covers the field so completely you can get just what is required, whether bold or elaborate designs or something comparatively simple.

¶ Before buying a Steel Ceiling of any description, get full details of Berger's "Classik."

ASK FOR CATALOG D-64

The Berger Mfg. Co., Canton, Ohio New York Philadelphia Boston Chicago St. Louis Minneapolis San Francisco Atlanta

---

Wall Papers and Wall Coverings

A Practical Handbook

for Decorators, Paperhangers, Architects, Builders and House Owners, with many half-tone and other illustrations showing the latest designs

By ARTHUR SEYMOUR JENNINGS

EXTRACT FROM PREFACE

THE author has endeavored to include characteristic designs in vogue today, and to give reliable information as to the choice of wall papers as well as to describe the practical methods of applying them. In dealing with matters concerning decoration there is always the danger of leaning too much toward an ideal and of overlooking the practical requirements of commercial life. The author hopes that he has been successful in avoiding this fault, and that his book will be regarded as both practical and useful.

One Large 8vo Volume, Cloth. $2

MUNN & CO., 361 Broadway, NEW YORK

Write for free catalog **"Plants and Plans for Beautiful Surroundings"**

Full of invaluable information, illustrations of flowers and beautiful lawns. It shows how the modest as well as the most extensive grounds can easily be made charming and attractive. There is nothing more pleasing and delightful to cultured taste than artistic and properly planted grounds. Write us to-day.

Wagner Park Conservatories
Box 423 Sidney, Ohio

BUNGALOWCRAFT

Latest and best book of Bungalow Plans, inside and out. Large, clear and practical. Copiously illustrated. Cost and description of each house. Indispensable to every home builder. Houses from $350 to $3.000. $1.00 postpaid. Sample pages, 10c.

H. A. EYMANN, Los Angeles, Cal.
403 Chamber of Commerce

St. Louis, Mo. Baltimore, Md.

F. Weber & Co.
1125 Chestnut St., Philadelphia, Pa.

Architects' and Engineers' Supplies

"FABRIANO" Hand-Made Drawing Papers
Superior to any other hand-made paper

F. Weber & Co.'s Illustration Boards, Air Brushes and Materials

---

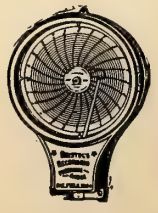
STANDING SEAM ROOF IRONS

CLINCH right through the standing seam of metal roofs. No rails are needed unless desired. We make a similar one for slate roofs.

Send for Circular

Berger Bros. Co.

PATENTED PHILADELPHIA



BRISTOL'S RECORDING THERMOMETERS

make continuous records of atmospheric temperatures, and are designed for both indoor and outdoor temperatures. Send for new catalogues.

THE BRISTOL COMPANY, WATERBURY, CONN.
NEW YORK *Branches* CHICAGO

one of the most wholesome; delicious in the house as it is delightful in the bed. You can not get too many of them. I shall add pansies, although they will give you some trouble and teach you a lot of lessons. Planted out from your hotbeds very early in the spring they will give their best flowers when it is quite cold weather; then they will die down in the heat of the summer, and you must have another lot ready to set out for autumn blooming. There are three of the annuals that I grow scattered about my grounds almost anywhere. Get the Drummond phlox and coreopsis and the annual larkspur into your grounds, and see that they are not all hoed up, and you will get a splendid chance for brilliant bouquets. The larkspurs are blue and white, the coreopsis yellow, and Drummond phlox of all shades. Mignonnette will generally reappear in the same way. Bachelors' button is a fine old-fashioned thing and I think you can afford to give it room.

(6) One or more flowers should be selected each year for a hobby. I found great satisfaction in growing dahlias for several years. I originated a fine set of seedlings of the cactus order, before they became popular. There is no limit to the sporting of this flower from seed. Buy a half dozen of the choicest show doubles; give these rich, deep garden soil, with plenty of water and sunshine, and you will get splendid seed for experiments. The dahlia makes considerable trouble, because it has to be dug for winter. Dig on a dry day, dry off the bulbs under a shed for a week, then store in a dry cellar that will not freeze. The gladiolus has been a hobby of mine from the time the gandavensis had its first evolution. You can indulge in a thousand bulbs or bulblets, or half that number, and sow them in a trench of good soil three inches deep. If you get the ramosus sorts they will endure the coldest winters, and multiply without care—only you will have to thin them out occasionally. I tried seedlings also and had fine success. A third hobby to indulge in from time to time should be hollyhocks. These can be planted along the edge of your corn field. In fact, if you get them well established they will sow themselves, and then can be hoed out where not wanted. I do not know anything finer than an avenue of hollyhocks running along through your fruit garden, or a border for your vegetable garden. The old-fashioned singles are better than the new-fangled doubles any day, but try both. I am inclined to add one more to this list of hobbies, although the carnations do make considerable work. They must be carefully covered in the winter with stuff that will not rot them, or they must be dug up and stored in a light room and occasionally watered. The clove carnation is about as good, and sweeter, and hardy.

I do not advise anyone to do much in the way of bedding plants, but if big show is wanted a mass of geraniums (doubles are best) will do it quickly. For effect at a distance cannas beat everything. In Florida I have a wild flower called the Cherokee bean that makes the grandest masses of crimson scarlet that I ever saw. It blossoms from the first of January well into the middle of May. A good substitute for this in the North is the Oriental poppy, a magnificent perennial that opens its flowers seven or eight inches broad through the month of May. After blooming it soon dies down and is out of sight. It is a very good plant to use in a chrysanthemum bed or a canna bed, for early display. If you are of a quiet disposition and want something to fall in love with, grow verbenas. But I am surely running over my limits in naming some things that the home maker must not start out with. All these hobbies can come in as the

(*Continued on page xiv*)

CORTRIGHT

THE EASILY LAID ROOF

Every Architect will realize that, other considerations being equal, the easily laid roof is for two reasons the most desirable.
It Saves Time—When any handy man can be put at the job there's no need to wait until this or that skilled mechanic is finished somewhere else.
It Saves Money—You don't need nigh priced men, and even at equal wages the **CORTRIGHT METAL SHINGLE ROOF** is laid so quickly that the saving in labor is a large item. Instead of other considerations being equal, however, the **CORTRIGHT METAL SHINGLE ROOF** has every form of roofing completely out-classed. We won't attempt to name all its points of superiority here, but just drop us a card. We'll send you complete proof of all our claims.

PHILADELPHIA **CORTRIGHT METAL ROOFING CO.** CHICAGO

Note:—All genuine **Cortright Metal Shingles** bear the stamp "CORTRIGHT, Reg. U. S. Pat. Off." Accept no imitations.

New Papers on Concrete Reinforced Concrete Concrete Building Blocks

Scientific American Supplement 1543 contains an article on Concrete, by Brysson Cunningham. The article clearly describes the proper composition and mixture of concrete and gives the results of elaborate tests.

Scientific American Supplement 1538 gives the proportion of gravel and sand to be used in concrete.

Scientific American Supplements 1567, 1568, 1569, 1570 and 1571 contain an elaborate discussion by Lieut. Henry J. Jones of the various systems of reinforcing concrete, concrete construction, and their applications. These articles constitute a splendid text book on the subject of reinforced concrete. Nothing better has been published.

Scientific American Supplement 997 contains an article by Spencer Newberry, in which practical notes on the proper preparation of concrete are given.

Scientific American Supplements 1568 and 1569 present a helpful account of the making of concrete blocks by Spencer Newberry.

Scientific American Supplement 1534 gives a critical review of the engineering value of reinforced concrete.

Scientific American Supplements 1547 and 1548 give a resumé in which the various systems of reinforced concrete construction are discussed and illustrated.

Scientific American Supplements 1564 and 1565 contain an article by Lewis A. Hicks, in which the merits and defects of reinforced concrete are analysed.

Scientific American Supplement 1551 contains the principles of reinforced concrete with some practical illustrations by Walter Loring Webb.

Scientific American Supplement 1573 contains an article by Louis H. Gibson on the principles of success in concrete block manufacture, illustrated.

Scientific American Supplement 1574 discusses steel for reinforced concrete.

Scientific American Supplements 1575, 1576 and 1577 contain a paper by Philip L. Wormley, Jr., on cement mortar and concrete, their preparation and use for farm purposes. The paper exhaustively discusses the making of mortar and concrete, depositing of concrete, facing concrete, wood forms, concrete sidewalks, details of construction of reinforced concrete posts, etc.

Scientific American Supplement 1583 gives valuable suggestions on the selection of Portland cement for concrete blocks.

Scientific American Supplement 1581 splendidly discusses concrete aggregates. A helpful paper.

Scientific American Supplements 1595 and 1596 present a thorough discussion of sand for mortar and concrete, by Sanford E. Thompson.

Scientific American Supplement 1586 contains a paper by William L. Larkin, on concrete mixing machinery in which the leading types of mixers are discussed.

Scientific American Supplement 1626 publishes a practical paper by Henry H. Quimby on concrete surfaces.

Scientific American Supplement 1624 tells how to select the proportions for concrete and gives helpful suggestions on the treatment of concrete surfaces.

Scientific American Supplement 1634 discusses forms for concrete construction.

Scientific American Supplement 1639 contains a paper by Richard K Meade, on the prevention of freezing in concrete by calcium choloride.

In **Scientific American Supplement 1605** Mr. Sanford E. Thompson thoroughly discusses the proportioning of concrete.

Scientific American Supplement 1578 tells why some fail in the concrete block business.

Scientific American Supplement 1608 contains a discriminating paper by Ross F Tucker on the progress and logical design of reinforced concrete.

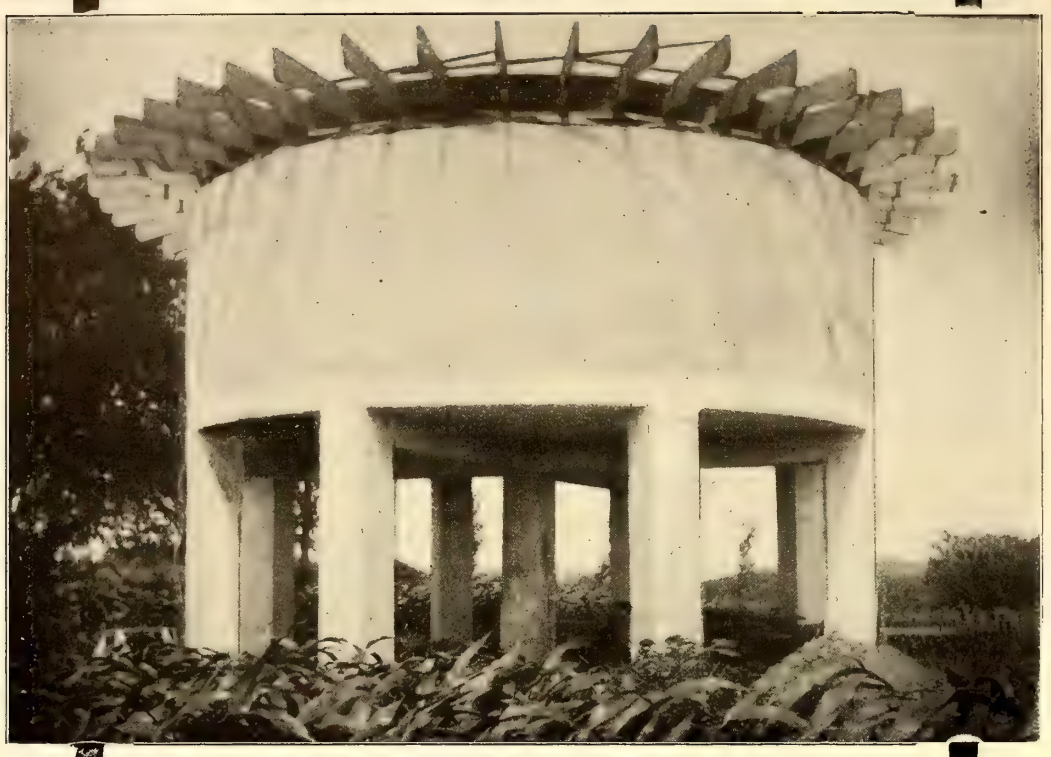
EACH NUMBER *of the* SUPPLEMENT COSTS 10 CENTS. A SET *of* PAPERS CONTAINING ALL THE ARTICLES ABOVE MENTIONED WILL BE MAILED *for* $3.40

Order from your Newsdealer or from

MUNN & CO., Publishers, BROADWAY, 361 **New York City**

FLOORS

ROOFS



A concrete tank erected on estate of Edmund Tatham, Katonah, New York

Frederick J. Sterner, Architect - - New York
De Lancey A. Cameron, Builder - - New York

Tank designed for storage supply of 15,000 gallons, built entirely of concrete reinforced with Clinton welded wire. Before roof was placed over tank, and during winter months, ice 10 inches thick formed on water stored therein. No cracks or leakage have developed.

Clinton Wire Cloth Company
CLINTON, MASS.

Ceilings

FIREPROOFING DEPARTMENT
ALBERT OLIVER
1 MADISON AVE., NEW YORK

WASHINGTON: ROSSLYN SUPPLY CO., COLORADO BUILDING
SYRACUSE, N. Y.: PARAGON PLASTER CO.
ST. LOUIS: HUNKINS-WILLIS LIME & CEMENT CO., SOUTH END 18TH ST. BRIDGE
SAN FRANCISCO: L. A. NORRIS, 835 MONADNOCK BUILDING
SEATTLE: L. A. NORRIS, 909 ALASKA BUILDING

Partitions

HOW ARE THE BEAMS HELD WHERE THEY ABUT THEIR SUPPORTS?

Are they Cut Away by Framing?

Do You Depend Merely on Spiking?

The Best Way is to Use Our Joist Hangers.

LANE BROS. CO. (The Door Hanger Manufacturers) 434-466 PROSPECT ST. POUGHKEEPSIE, N. Y.

Paint Without Oil

Remarkable Discovery That Cuts Down the Cost of Paint Seventy-Five Per Cent.

A Free Trial Package is Mailed to Everyone Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powdrpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manuf'r., 16 North St., Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write to-day.

Build Your Own Incubators and Brooders

and save half the purchase price. Any one can do it with my plans. I furnish the mechanical parts, Lamps, Regulators, etc., at low prices. My New Burner, Tandem Thermostat, and Special Heater, will save half the oil, half the time, and cost of operation. Fit any Incubator or Brooder. More than 25,000 have built their own Incubators and Brooders with my plans and fixtures. Not a single failure. My New LAMPLESS BROODER costs you only $4. I will send you my complete plans and catalog, prepaid, for only 25 cents to cover cost. Worth Dollars to you.

H. M. SHEER, 464 HAMPSHIRE STREET, QUINCY, ILL

Take off your Hat to the YERS
Write for Circulars and Prices to
F. E. Myers & Bro.
Ashland, Ohio

THE PUMP THAT PUMPS | HAY TOOLS | BARN DOOR HANGERS | HAY RACK CLAMPS

AMERICAN TELEPHONE & TELEGRAPH CO. AND ASSOCIATED COMPANIES — LOCAL AND LONG DISTANCE TELEPHONE — BELL SYSTEM

One Policy
One System
Universal Service

American Telephone & Telegraph Co.

Belgian Hares

Rufus Red, Registered, and Pedigreed Stock For Sale. Send three 2-cent stamps for Illustrated Catalogue.

Pleasant Ridge Rabbitry
Cor. Dudley St. & Hampton Ave.
Station B LONG BRANCH, N. J.

American Homes and Gardens and Scientific American
To one address $5 per year Regularly $6

AMERICAN HOMES AND GARDENS

Price, 25 Cents. $3.00 a Year

CONTENTS FOR FEBRUARY, 1909

PAGE

SUNSET, NORTH FORK, JAMES RIVER, East Lexington, Virginia 42

MONTHLY COMMENT—The Old and the New in the Country 44

NOTABLE AMERICAN HOMES—The House of C. P. Searle, Esq., at Ipswich, Massachusetts. *By Barr Ferree* 45

HAND-MADE RUGS, THE REVIVAL OF AN OLD HANDICRAFT....*By Mabel Tuke Priestman* 50

THREE TYPES OF GAMBREL ROOF HOUSES.....*By Paul Thurston* 53

PLANT BREEDING 58

THE DINO COLLECTION OF HISTORIC ARMOR.....*By Isabel R. Wallach* 59

THE USE OF ANESTHETICS FOR PLANTS.....*By S. Leonard Bastin* 64

A FEW NEGLECTED FRUITS.....*By E. P. Powell* 65

A SEVENTEENTH CENTURY HOMESTEAD.....*By Alice M. Kellogg* 66

A WOOD GARDEN.....*By Phebe Westcott Humphreys* 70

NATURE'S TRAPS .....*By Charles F. Holder* 73

THE COUNTRY SEAT OF CHARLES S. BROWN, ESQ., MOUNT KISCO, NEW YORK. *By Charles Chauncey* 74

A NEW METHOD OF HOUSEKEEPING.....*By Rosika Schwimmer* 77

THE NEW SEED TESTING STATION IN PARIS.....*By Jacques Boyer* 78

CORRESPONDENCE:

PROBLEMS IN HOME FURNISHING.....*By Alice M. Kellogg* 80

GARDEN WORK ABOUT THE HOME.....*By Charles Downing Lay* 80

Making of a Country Home: I. The Flowers.

New Books.

Combined Rate for "American Homes and Gardens" and "Scientific American," $5.00 per year
Rate of Subscription of "American Homes and Gardens" to foreign countries, $4.00 a year
Rate of Subscription of "American Homes and Gardens" to Canada, $3.50 a year

Published Monthly by Munn & Company, Office of the "Scientific American," 361 Broadway, New York

CHARLES ALLEN MUNN, President - - - - FREDERICK CONVERSE BEACH, Secretary and Treasurer
361 Broadway, New York 361 Broadway, New York

[Copyright, 1909, by Munn & Company. Registered in U. S. Patent Office. Entered as second-class matter, June 15, 1905, at the Post Office at New York, N. Y., under the Act of Congress of March 3, 1879]

NOTICE TO CONTRIBUTORS—The Editor will be pleased to have contributions submitted, especially when illustrated by good photographs; but he cannot hold himself responsible for manuscripts and photographs. Stamps should in all cases be inclosed for postage if the writers desire the return of their copy.

Sunset, North Fork, James River, East Lexington, Virginia

AMERICAN HOMES AND GARDENS

Volume VI February, 1909 Number 2

The hall in the house of C. P. Searle, Esq., at Ipswich, Massachusetts

Monthly Comment

The Old and the New in the Country

NO "butter-in" was ever so uncomfortable or so much in the way as the newcomer who ventures to purchase a rural property in a region in which the native-born are in the majority. The social comfort of such a person is precisely that of the Philadelphian residing north of Market Street who thinks he can make an impression on the elect who live south of that singular dividing line. The pyramids of Egypt, with their frayed surfaces and weather-beaten contours, are, in fact, in a very mobile class compared with the passive resistance offered by the oldtimers to the advances of the new. It is a force that can not be calculated in any known mathematical quantity, and its specific gravity is so dense that it quite outweighs all other substances, forces, powers and combinations in this respect, as it does, indeed, in all others.

YET it is quite natural that this should be so. The countryside not only constitutes the largest habitable portion of the surface of the earth, but it is entirely ample and sufficient in itself. Has not the farmer his fields and meadows; his horses, cows, pigs, ducks and chickens; his potatoes and his cabbages? Does not the daily yield of eggs, the comparative size of the potatoes, and the ravages of the cutworms supply topics of conversation at least as elevating and as invigorating as the vagaries of the weather, or the doings of various ladies at sundry theaters on Broadway? And are not his neighbors always available for discussion, dissection, analyzation and annihilation? Here, indeed, we come right into the chief delight of the countryside and the final proof of its superiority as a state of existence. The study of human nature is nowhere pursued with more avidity than in the country. It is the one universal industry. Everybody studies it and everybody practises it. Everybody talks of it; everybody compares notes on it; everybody formulates judgments on this absorbing theme and proclaims them from the roof tops. In the city, of course, it is quite different. There one can live next door to a man for years and never so much as know his name; there you may see your neighbor daily and never have a hint as to his business or the source of his income.

THIS barbarous custom has never obtained in the country. If knowledge is an expression of civilization then the countryside is, of all states of mind and matter, the most civilized, for there alone is knowledge, and profound knowledge, of people other than yourself, of affairs other than your own, of doings other than those you yourself perform, and of matters of which you have no concern. There is a lot of useless knowledge in the world, and nowhere is it more abundant, nowhere is it more assiduously cultivated than in the rural districts, in which everyone's affairs are of so much greater interest than your own. There are, of course, many compensations for this state of affairs; for if one should, by chance, happen to forget anything about oneself, he has but to apply to his neighbors, and is forthwith regaled with a mass of detailed information that entirely saves the bother of making notes or keeping a diary.

IT must be obvious that one unaccustomed to this state of things will find it mighty strange and queer. That something of this sort exists, no doubt everyone has heard. But one only realizes it after one has plunged into it and inhales it with the pure fresh air and absorbs it with the pleasant outlooks over the open land—natural conditions that are supposed to be the prevailing characteristics of the countryside. And so they are; but human life itself is the greatest of all forces, and the human force of the countryside is the most overpowering force of all that great fair region. If not present within your house it is without it, and there it is supreme. If the country folk are in the majority in your neighborhood, they will be the measure of its progress and human desirability. The farmers will fix the taxes and determine the quality of your roads; if they can have a hand in adjusting your boundaries, be assured that that, too, will have their attention. And the standard by which all these things will be done and measured will be the country standard, a standard not fixed by expert advice and certainly not carried out under skilled or scientific direction.

THERE may be nothing unfair in this, and never a suggestion of illegal procedure; but the countryside has its own ways and lights, and its own ways of accomplishing results, which, being very rural, are doubtless satisfying to the rural mind. The fundamental political concept of the country is, for example, that the most capable minds of the region are the active political powers. The governing boards and councils, the public bodies of every sort, are, for example, invariably composed of the "best" men available for these lowly offices. This naturally follows from the very complete information that everybody has about everybody else. You may, together with every other inhabitant, see your local mayor every day, as he wends his way to his arduous clerkship in the great city. In New York you may never so much as catch a distant glimpse of this mighty potentate throughout the whole of his term of office. But in the countryside it is different; the town clerk may shovel in your coal; you buy your groceries from the tax assessor, and the lady of the chief alderman, or whatever his lofty title may be, may be the estimable person who comes in once a week to do the family wash. It is a bit different in the country, and the newcomer who has never realized these things will find it difficult to adjust himself to them.

BUT a true adjustment there can never be. The new will always be new in the country, and the old old. If the oldtimer sells his ancestral mansion, the purchaser is entitled to no more consideration than if he had bought a pair of old pants. He has simply taken something that was no longer good enough for the original owner, who forthwith establishes himself in a more modern house that can not be compared with the old in architectural interest and which may actually boast no greater comfort or convenience. The years may come and go, but the tenacious memory of the oldtimer keeps alive the horrid fact of the newness of the newcomer. The continual payment of yearly increasing taxes, the achievement of personal distinction elsewhere, even definite accomplishment, count as nothing against the rigidity of the country elect, of the men and women of the soil, of those whose right to country air and country living rest on the distinguishing merit and proud claims of birth.

BUT the countryside is broad and its beauties may be enjoyed without irritating contact with the natives. Real progress in the country is best obtained and illustrated where great tracts have been developed by single ownership or by corporate development. New communities are thus established in which everyone stands on an equal basis of freshness. There may be discomforts and drawbacks here, too; the promises made at the outset may not always be kept; but at lease everyone will be common victims of the same enticements. Life has some compensations, even if it is not always free from care.

The house as approached, with main entrance and inclosed yard

Notable American Homes

By Barr Ferree

The House of C. P. Searle, Esq., at Ipswich, Massachusetts

THERE is a penetrating charm in the overlooks of the Ipswich River that amply compensates for any exertion entailed in reaching the heights that afford a view over the surrounding country. There are, of course, no difficulties in getting to Mr. Searle's fine house, for you naturally approach it by carriage and road. But its elevation of about one hundred feet is quite sufficient to make it a landmark in the vicinity, and to give its owner a variety of charming views which nowhere can be so well seen as from its porches and terraces. Below, in the somewhat immediate foreground, is a very extensive expanse of salt marsh, divided by winding creeks and extending from the base of the hill for about two miles to the white sand dunes which form the shore of Ipswich Bay. Beyond these another stretch of the Atlantic Ocean is visible, extending from Annisquam on the north side of Cape Ann nearly to the south of the Merrimac, and including the Isles of Shoals, the dunes of Plum Island and two or three great drumlins which rise from the marshes. To the north there is a similar view, which extends as far as the city of Newburyport and the hills in the southern part of Maine. Limitless outlooks, very obviously, and wonderfully varied and interesting in every aspect. The house is not built on the summit of the hill on which it stands, but has been erected a little below the top, so that, seen from the river, it is provided with a background of splendid green trees. It very completely avoids the barren and windy appearance of a house placed upon a hilltop, a clever recognition of site values not always to be found in houses loftily situated.

It is not until the house has been reached, and its position and points of view carefully studied, that one realizes that the choicest of all locations in the great two hundred acres estate, of which it is the chief building, has been selected as the spot for the dwelling. The determination of the site was the first great step in the work of building that was to be done here, and both architects and owner are to be congratulated on the admirable way in which this first and most essential preliminary was so successfully realized.

And the site, very clearly, was an inspiration to successful designing, as the architects, Messrs. Kilham & Hopkins, of Boston, have demonstrated in this stately dwelling. It is a long rectangular house, quite formal in its general outline, since it contains no parts, except the balconies of the second story, that project beyond the limits of its four walls. As a matter of fact, however, it consists of two portions, the main part, which constitutes the great southern half of the whole, and an extensive service wing which forms the northern part. The latter forms a continuous part of the wall of the entrance front, and its roof is continuous with the main roof; but on the terrace front, which will presently be disclosed as the chief and ornamental front of the house, it is retreated, showing its individual character, and leaving the main building free and independently symmetrical.

The silhouette, the general outline and form of the house is strongly marked. In almost every aspect it presents the appearance of a rectangular building, an aspect which even the retreat of the service wing on the terrace front scarcely lessens on that side. This continuity of parts is both heightened and emphasized by the roof, which covers the whole building without break of any kind, and which rises in

The great terrace inclosing the inner front of the house

a somewhat flat angle to a great level. Naturally enough the roof is broken by the chimneys, and some of these are so large as to well deserve the designation massive. But save for these, and some small dormers on the entrance front—windows scarcely larger than eyes, with rounded roofs—the roof is a continuous stretch of warm red tile, which forms an agreeable contrast with the delicate cream of the cement walls of the house. This external color scheme has been quite as well studied as the silhouette, and both, as has already been pointed out, are very essential elements in the character of the design, which quite obviously owes its inspiration to Italian models.

A further study of the exterior discloses another basic fact, and it is that the walls of this house are intended to perform their natural functions as inclosures for the dwelling and for no other purpose. There is no external ornamentation, save

The loggia and terrace

The entrance door and marquise

of a strictly structural kind. Yet the photographs show how thoroughly interesting a house can be which is designed on this principle, and in which each part has some definite work to do and does it in a thoroughly satisfactory way. Take the entrance front, for example, which is, in a sense, the rear of the dwelling and is not seen until one is almost at the door. At one end is the service wing, the lower story of which is hidden behind a cement wall, faced with trellis work, a clever and ornamental device that thoroughly shuts off this portion from the main part. The windows in the second story are dropped below the level of the others, and the narrow string of the main portion disappears against the window. The adjoining window in the upper part of the southerly panel opens on to a balcony with balustraded railing, which, in a larger form, is found again on the terrace front; while at the extreme end of the front is a single large round arched opening, glazed and screened, that admits one to a covered porch.

It is easy to perceive from this analysis, that the fundamental principle of this design was utility and convenience. Where windows of a certain kind were needed and demanded by the interior plan they were placed where convenience dictated. Yet there is order and form in this front; for the rectangular windows are of identical dimensions, and every

The living-room and library is an apartment of immense cheer and charm

frame of the first window in the service end. The small panel over these windows is not repeated elsewhere.

Here, then, is a distinct differentiation of a portion of the house that leaves no hint unuttered as to its purpose and destination. The lateral surface here is divided into three unequal parts by no less a utilitarian feature than the leaders which descend from beneath the eaves, and which are a distinctive feature of every front. The windows of the second story give the key to the irregularity of the design. The northerly section contains two windows, the southerly four, while in the central panel is the entrance doorway and a large two-story round arched window that lights the staircase. The doorway itself is eminently simple and is protected with a marquise, above which the round light of the central opening appears, while on each side is a narrow slit-like part is held in place and harmonized by the roof and cornice with which the house is crowned, a roof of strongly projecting eaves supported on brackets.

The somewhat severe treatment so deliberately exhibited on the entrance front gives way, on the terrace front, to a more ornate and symmetrical development. Exactly this sort of development was to be looked for here, and very stately and beautiful this front is, which is actually the most conspicuous part of the house, quite conspicuously visible from the driveway and the adjacent lower country. In the center is a loggia of three graceful round arches, the supporting columns in the center being coupled; it is vaulted within and paved with tile, the flooring extending out on to the lawn of the terrace with which the whole front is supported. The division of the wall by leaders obtains on this

The living-room and library is finished in French gray and white; yellow curtains give the real color note

front as well as on the entrance side; each end panel contains three windows, reaching to the floor, with broad, firm frames and keystones rising above the uppermost molding. Above are four windows, smaller and without the large frames of the first story; the central windows in each group descend to the floor and open on to balconies. There are three windows in the central panel over the loggia; and above is the roof, in a splendid stretch of unbroken surface, the dormers and chimneys being left for the entrance front. It is an immensely dignified composition, beautifully proportioned in every part, entirely adequate as an ornamental exterior, an imposing front of quiet unusual stateliness.

Thus the structure of the house and the architectural treatment of its exterior. My notes would, however, be quite inadequate without reference to the magnificent terrace that is not only a conspicuous part of this front, but which really supports and incloses the whole building on this side. It is about sixty feet wide, and is supported by a stone wall that rises solidly to a flat, plain coping. It is abundantly supplied with stone benches and ornamental jars and vases; its surface is beautifully grassed. Great flights of steps lead down to the lower levels north and south. On the north they extend to a vast lower lawn, and on the south to the flower garden. The cement wall which inclosed the kitchen wing on the entrance front reappears here in a similar form, but with large segmental arched openings, filled in with trellis screens, in addition to the applied trellis work in the wall. This space forms the kitchen yard and is amply sufficient for all service uses.

The flower garden on the south of the house is a vast and beautiful square, laid out in a formal manner, with a central circular pool, and rectangular paths with insets at the corners that help to give it characteristic form. A broad path is continued wholly around the central portion and conducts to other parts of the grounds. Very gay and beautiful it is here in the height of the summer season, when all the surrounding countryside is fully decked with its mantle and crown of green. Then this charming place is in the heydey of its beauty, and every part seems to contribute some essential to the completeness of the whole picture.

The stately character which dominates the exterior of this house is amplified and developed in the interior. The general impression is quite palatial in the ample size and fine proportions of the rooms, in the vaulted ceilings, and the treatment of the whole. All the public portions are treated in a quiet tone of French gray with white woodwork, a combination that makes for coolness and dignity, and affords a fine background for more distinctive coloring in the furniture and draperies.

The main staircase immediately adjoins the entrance door, giving space for a hall in the center of the house that opens on to the terrace loggia. The large high windows are surmounted with round lunettes. The ceiling is an elliptical vault, supported by pilasters against the walls and by free

standing coupled columns in the center, the latter being a device that is an essential feature of the external loggia. The curtains are red, and the same warm color is the prevailing note in the furniture and rugs. The woodwork of the furniture is painted white both here and, in a general way. elsewhere in the main rooms, thus conforming with the woodwork of the various apartments. The effect of this hall, with its groined and vaulted ceiling, has distinctively the character of a salon of an Italian villa.

The dining-room is at the north end of the hall, and occupies the whole of the house here, reaching from front to front. The walls are again French gray and the woodwork white. A low flat rounded vault covers the room from side to side. It is divided into great panels by flat bands that rise from the pilasters, and is decorated by floral borders in relief. The walls are paneled throughout, with pilasters between the windows and at the corners of the chimney breast, which fills the center of the north end. The curtains are pink, and the rug and furniture covering are pink and white. At the far end is the door to the butler's pantry, and beyond is an extensive suite of service rooms. Very great care has been taken to render this portion of the house at once comfortable and serviceable. Provision has been made for the performance of the kitchen work out of doors, and every pains has been taken to make this department as complete as possible.

The south end of the house is occupied by an immense room that is both living-room and library. The walls are simply paneled by small moldings in a design that provides an inclosing panel for each window and door, with smaller or larger panels for the intervening spaces as may be required. The ceiling is supported by a deep cove, that rises to a flat central rectangle, decorated with a vast oval wreath in low relief. The walls, as elsewhere, are French gray, and the woodwork white. The curtains are yellow, and this hue gives the prevailing note to the rugs and furniture coverings. The many windows and the special color of the room make this an apartment of immense cheer and charm, a cheerfulness that is inhanced by the low bookcases with their comforting contents with which the base of much of the walls is lined. This room connects with a screened and vaulted porch on the extreme south of the house, which forms an agreeable shelter from the east winds.

It is interesting to note that while this house is very modern in its building, the estate has been a productive farm for many years. The land, in a general way, consists of rolling green fields, broken by pond and brooks, and is strongly reminiscent of many parts of rural England.

Yet thoroughly modern and quite new as this house is, it fits into the landscape, forms a part of the great estate, in a thoroughly natural way. In many senses this is the supreme test of success in exterior design. A house needs not only to be good, but to be suited to its environment. Mr. Searle's quiet house, with its extensive dimensions and handsome aspect, surely accomplishes this in a thoroughly charming and satisfying way.

The dining-room has a low flat vaulted ceiling, and walls of French gray with white woodwork

Hand Made Rugs, the Revival of an Old Handicraft

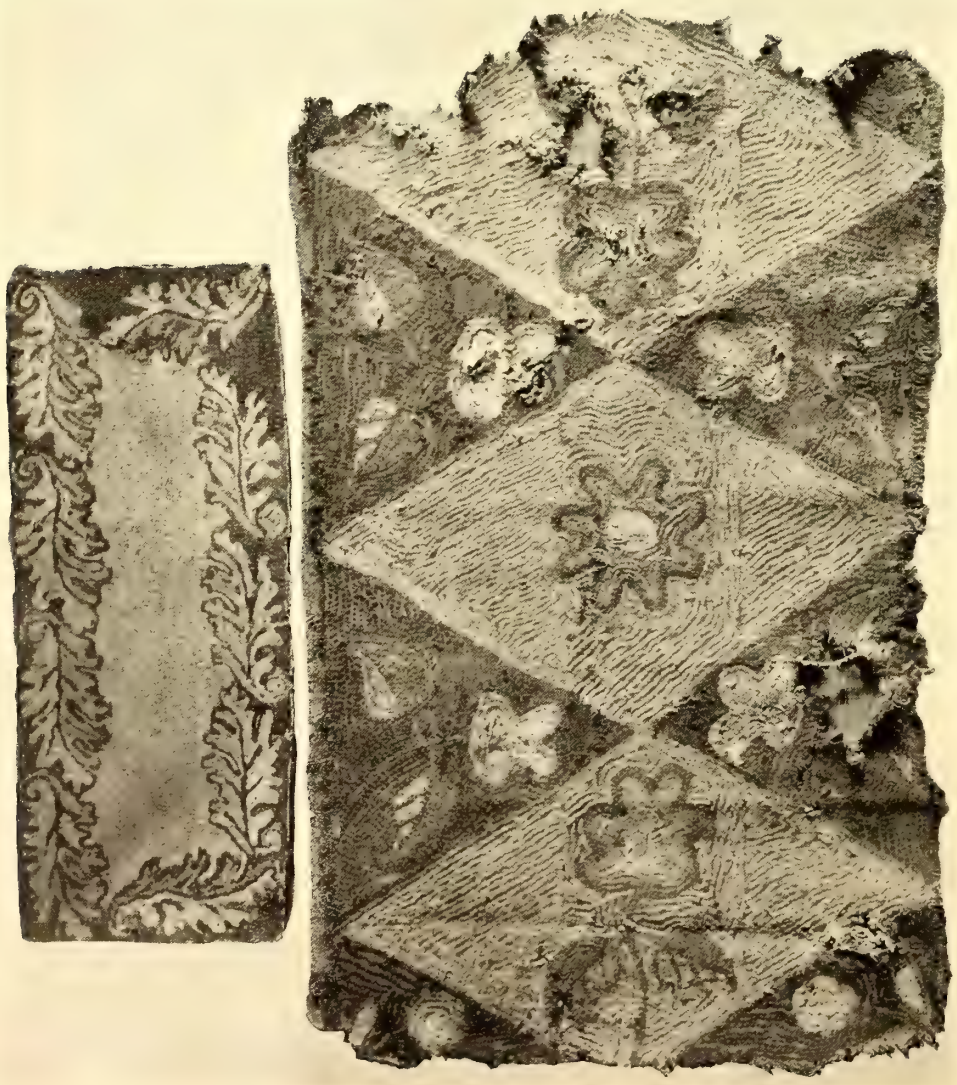
By Mabel Tuke Priestman

IN many parts of the United States great interest is being taken in the making of hand-made rugs, and many women in rural communities find that they have the means at hand of a profitable employment. The evolution of the old-fashioned New England hooked rug has, owing to the energy of such women as Mrs. Helen R. Albee and Mrs. Douglas Volk, resulted in a product very different from the original.

Between thirty and forty years ago these pulled rugs were found in the homesteads of New England and in the Southern States. Many of these old-time rugs, made from wornout clothing, are still in existence, having withstood the wear of years and have outlasted new carpets bought years later. As they proved so durable, there has been a revival for a continuance of this craft, and they are now made from new materials which are dyed in artistic colors and worked up into beautiful patterns. As this is distinctly an American industry it is advisable to follow Indian rather than Oriental motifs. Long ago the New England women used to design their own, and usually made them from floral designs. Many were extremely ugly, although originally and cleverly designed rugs were occasionally found. As there was a crying need for designs, these were at last supplied by firms who knew nothing about art, but who understood how best to sell their patterns. These were stamped on burlap and sold from door to door. A dog on a mat, a horse's head, a cow in a meadow, a bunch of roses, these ugly realistic designs were scattered all over the New England States. Women knowing nothing about art eagerly bought them, and did their beautiful work over these horribly designed patterns.

Showing how the rug is hooked

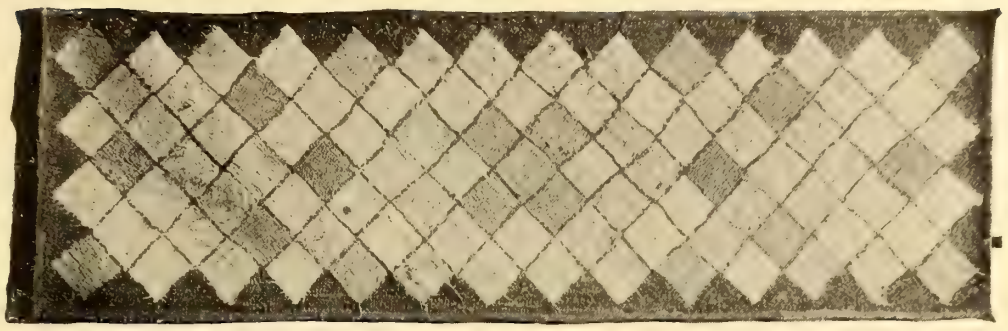
A well-known artist who had made a study of antique pulled rugs had some interesting experiences when making a search for them. The artist, together with a friend, made quite a find when spending their vacation at Malpique, on Prince Edward Island. They hired a buggy and drove throughout the country in quest of the much-desired floor coverings. After making some excuse for entering the farm houses they would try to explain their errand. The simple country people could not understand how any sane woman could actually want their old discarded rugs, and very amusing times they had with these peo-



Antique rugs made on hand-woven blankets

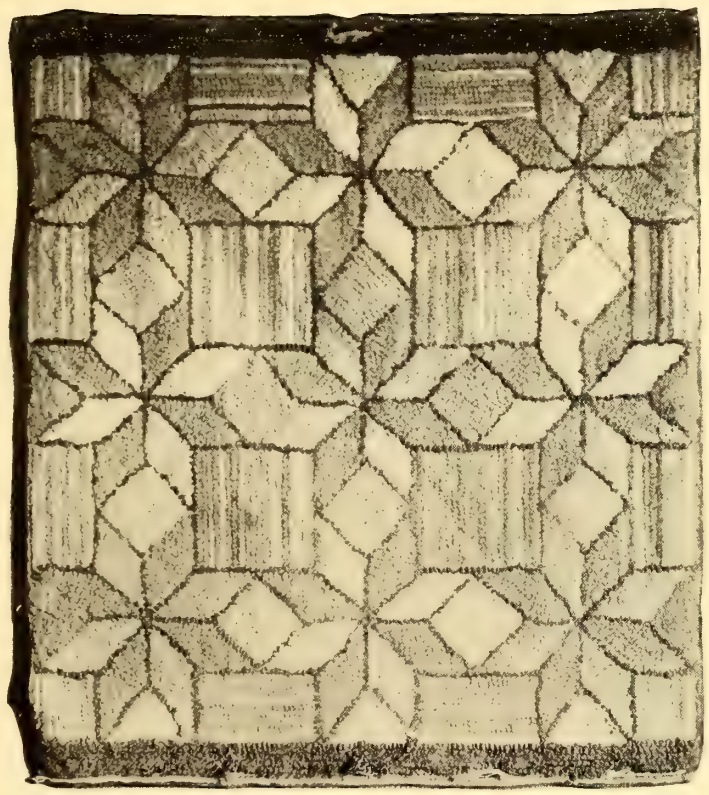
ple. Everywhere they met with incredulity, while only a few took them seriously.

By dint of much coaxing and tact they were allowed to poke about in garrets and sheds, and all sorts of treasures were revealed as a reward of their enterprise. One was found in a pile of rubbish in the corner of a garret, and only an artist could have realized its beauty under the coat of dust and dirt that concealed its soft mellow colors. A small rug had been made by a child who had designed it and dyed the materials from her mother's dye pot. When the woman found that they would really like to buy the rug, she went into roars of laughter at the very idea of its being any value, and could hardly be persuaded to name a price for it. However, she finally mentioned forty cents, which she was quite sure was too much to ask for it. It proved, however, one of the most beautiful rugs in the collection. It is hooked through an old homespun blanket and had been made by the mother of the woman who sold the rug, so that it is, in all probability, seventy-five or a hundred years old. It seems strange that sentiment should not have proved strong enough to make the woman cling to a piece of work made by her mother in her childhood.

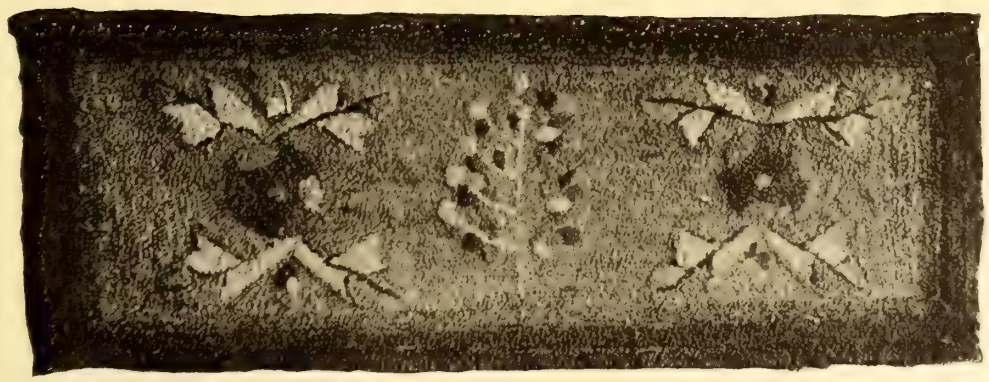


A frequent design for old pulled rugs

Pulled rugs were made by the women of the family during the long winter evenings from cast off clothing, such as undershirts, stockings, flannel petticoats and old blankets. All of this clothing was homespun and woven by hand, and is, therefore, very soft in texture. When these were dyed in the old blue and madder dye pots and colored with other dyes, made from roots and berries found on the farm, the very beautiful, soft colors, together with their texture, gave them an old-world appearance that is quite charming. Instead of being pulled through burlap they were pulled through partly worn hand-woven blankets so that they are very soft, which makes them particularly desirable for bath rugs. In those days designs could not be bought from the country store, and each worker made her own, the result being charming, individual patterns.



An old rug of real beauty



Designed, woven and pulled by a child nearly a hundred years ago

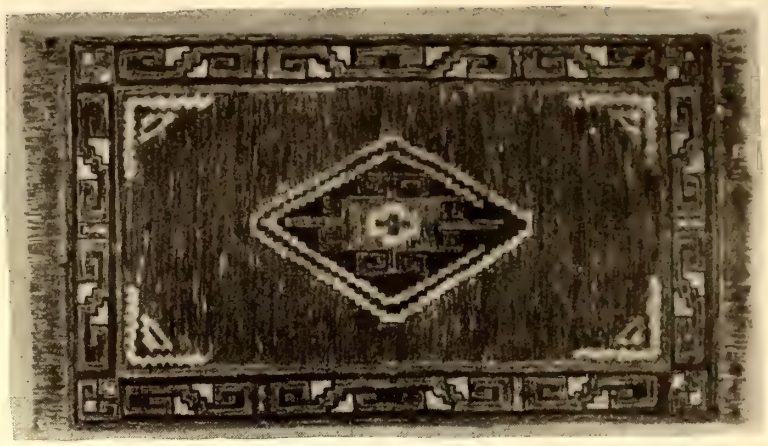
Among the later rugs occasionally may be found a pretty design. An illustration shows a favorite pattern bought ready stamped, but it is made of old hand-woven and home-dyed materials, and seems to belong to the old set. Many designs were evolved from oilcloth, and quaint little squares were one of the most popular patterns among the rugs. Sometimes the entire kitchen floor is covered with one large rug, while smaller ones will be found in the outer kitchens.

At one farmhouse was found what proved to be the gem of the collection. It was covered with dirt, as it had been used for the men to wipe their feet on when they came from the stables before entering the house. When it had been thoroughly cleaned and its beautiful colors revealed, though a good deal worn, it proved worthy of a place of honor on the wall. Unfortunately moths recently attacked it, eating large holes out of the woolen blanket foundation. thus spoiling its value as a rug.

These old-fashioned rugs were especially valued as a means of using up old clothing, and at the same time providing a durable and warm floor covering—many of them lasting from twenty to thirty years. As they possessed such lasting qualities there was excellent reason why the pulled-rug industry should not be allowed to die out when the cheap machine-made articles became the rage.

The revolutionized pulled rug is made from new flannel of the very best quality and dyed in colors as beautiful as it is possible to make them. The designs taken from Indian motifs are simply and carefully planned and are worked up in many rich, strong colorings. The method of making the new rug is, however, almost the same as that of the old-fashioned pulled rug. The design is first stenciled on to burlap and is then placed in the frame made for the purpose. As only a portion of the rug can be done at one time, one corner will be fastened into the frame, and it is then moved as it is completed. The flannel is pulled through the open mesh of the burlap in a series of loops. This may be done with either a coarse crochet hook or a little

wooden machine sold for the purpose. The illustration shows the method of holding the pulled-rug machine. This goes over the ground very quickly. The point is dug into the work and the top half is moved swiftly to and fro. A skilled worker can move it along leaving a trail of loops behind as quickly as an artist can draw, so that it is a great saving of time on the old-fashioned method of pulling up the loops with a crochet hook. In olden times the more symmetrical the loops appeared the better the work was considered, but irregularity is preferred to-day and this is gained by all the loops not being of the same size, and the top of the rug is gone over with sharp shears so as to make at least half of the loops ends, which gives it a much softer texture than if all the loops were of the same height. In the old-fashioned rugs straight, even rows of loops detracted from the design. To-day they are done up and down, across and anyway to gain irregularity.



Design for a pulled rug

It is an interesting story how Mrs. Albee some twenty years ago started a community in the making of the beautiful Abnakée rug, Her work was pioneer work and the many discouragements which attended her efforts would have prevented most women from proceeding with an undertaking started entirely with the idea of helping others, and from which she received no personal benefit. Not only did she make a band of women, who had hitherto made rugs only for their own homes, self-supporting, but she has given a new product to the country and the benefit of her experience and knowledge to other women interested in starting similar enterprises. The result is far reaching in its influence, as it brings a new force into the lives of women in rural districts where they have little to occupy their leisure time, and where the making of extra money gives them the opportunity of obtaining pleasures, and lifts them above the dull routine of farmhouse life. Mrs. Albee has supplied the flannel and hooked rug frames as well as the dyes which she makes for her own community to those who are trying to start similar industries. The illustration shows a group of Abnakée rugs and a large rug with a conventional leaf motif in the borders, designed by Mrs. Albee and executed by the women of this neighborhood industry.

A group of Abnakée rugs

In looking at the illustrations we can trace the growth of the New England pulled rug from the antique pulled rug, the original rug, some designs of the best of the "cat and dog" variety sold from door to door, and to the later pioneer products. The arts and crafts societies were the first to appreciate the evolution of these rugs, and to-day they can be found at these centers throughout America.

The primary purpose of a rug is to be used; but it has a secondary purpose that is quite as important, and this is to be beautiful. A survey of a general collection of rugs, especially those of modern make, and which may be found in almost any modern shop, shows that the latter element is too often wanting. As to the former quality it is, unfortunately, not always possible to depend on the claims put forth by the makers, but it will be at least charitable to assume that most of these claims are honestly intended and as honestly made.

But the beauty aspect of a rug is a matter that admits of easy solution, or at least it would seem so in these days of general art knowledge and art culture. As a matter of fact, however, there is so much to be desired in this respect that the field seems scarcely touched. The old home-made rugs, if not always beautiful, in the best sense, were at least honest, and represented honest effort. Many of them, of course, are exceedingly beautiful and full of interest, and the collector of the old-fashioned pulled rug will, if she exercises care and takes time in the search, find herself more than once rewarded with treasures of a real art value.

And these rugs, too, have a fitness in the home that many expensive rugs can never have, and in which many modern instances are completely wanting. They are simple and unpretentious in design, and were made for wear more than to be looked at, yet they possessed beauty that their makers may have been unconscious of.

Three Types of Gambrel Roof Houses

By Paul Thurston

ONE of the special purposes in building a country house is to secure as far as possible all the available space under as small a roof as requirements demand. The gambrel roof house presents the form by which the smallest area surface of ground may be utilized to the greatest advantage, especially when a large number of sleeping rooms are desired.

This applies, of course, to the two-and-a-half-story house. The advantage of the gambrel roof over the gable roof is best shown in the fact that a greater height of ceiling is obtained over the same floor space than in a house which is covered with a gable roof, and this is certainly an advantage when the attic of a house is required for extra rooms.

The house of Mr. Walter C. Sampson, at Summit, New Jersey (Fig. 1), is one type of gambrel roof house where the gambrel starts at the beginning of the second-story floor joists. This is done in order to economize in the space, and the reduction of the height of the house, making it only a two-story house in the outlines of a one-and-a-half-story house.

The exterior design of Mr. Sampson's house (Fig. 2), as well as the interior, are very attractive, and are the work of Messrs. Rossiter and Wright, architects, of New York. The color scheme of the exterior is yellow and white. The interior is finished in a simple manner with artistic results. The woodwork is stained a Flemish brown tone and the walls are tinted in soft browns and yellows, which harmonize well with the trim. The living-room (Fig. 3) has an open

1—Mr. Sampson's house at Summit, New Jersey, presents one style of gambrel roof which is most attractive

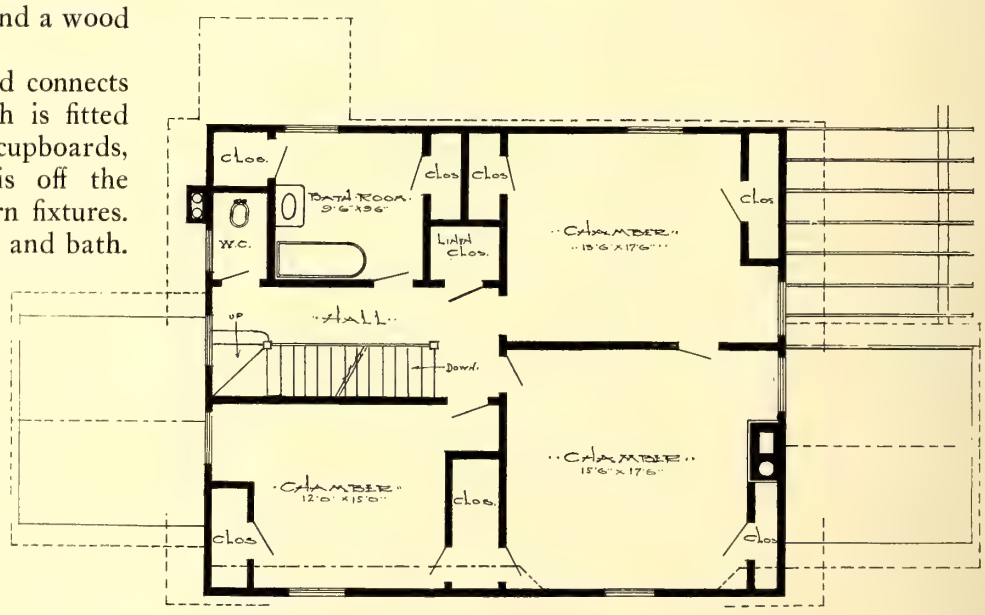
2—The pergola effect of porch is an interesting feature of the exterior of the house

fireplace fitted with brick facings and hearth and a wood mantel of good design.

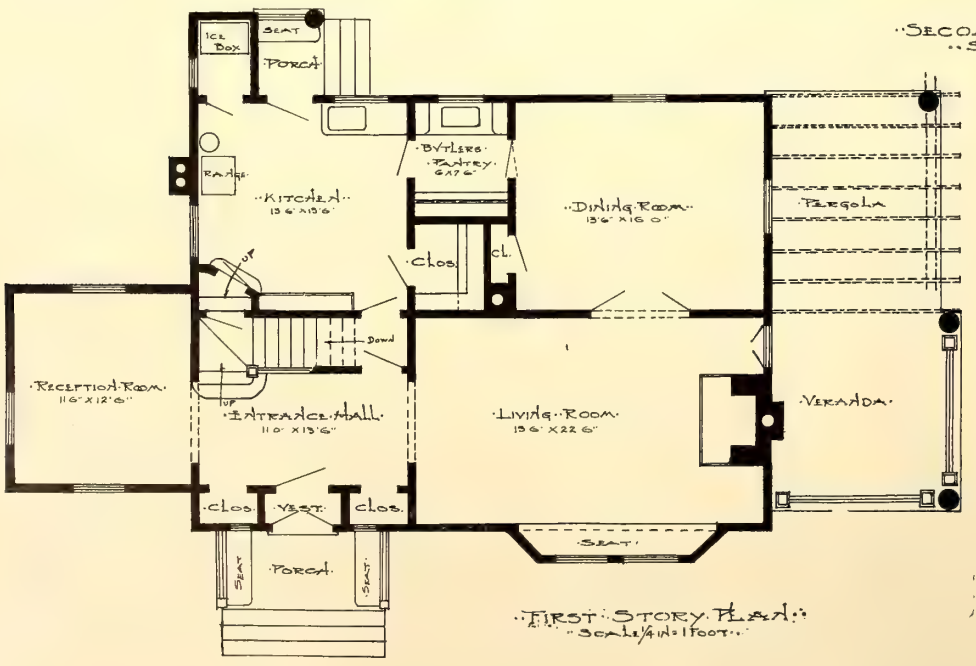
The dining-room is conveniently placed and connects with the kitchen by a butler's pantry, which is fitted with all the conveniences, such as sink, cupboards, dressers and shelves. The kitchen, which is off the pantry, is also fitted with all the best modern fixtures. The second story contains the sleeping rooms and bath.

Mr. Arthur E. Thayer adopted the Dutch Colonial style of architecture for his prototype when he decided to build the very interesting house at Dedham, Mass., illustrations of which are presented herewith in Fig. 9.

Mr. Thayer's idea was to build a simple and unostentatious house which would be in keeping with its surroundings and without affectation, and maintain something of the home feeling to be found in the old



SECOND STORY PLAN
SCALE 1/4 IN = 1 FOOT



FIRST STORY PLAN
SCALE 1/4 IN = 1 FOOT

Colonial houses built by the Dutch, and at the same time it was to be distinct from the type of house shown in Fig. 1 in order to secure a greater number of rooms in the attic.

The house is placed some distance from the road, and a winding driveway leads up to the porch in the center of the facade. The entrance porch (Fig. 11) is an attractive one with Doric columns, trellis and seats on either side. It is quite isolated from the piazza, where the family life centers in summer, and which is placed at the side of the house with access from the living-room and from the rear of the hall.

The house has a stone foundation, and with its low brick underpinning keeping the house quite close to the grade, carries

out the characteristics of the Colonial house. The exterior walls are covered with clapboards painted a French gray, while the trimmings are painted white. The blinds are painted bottle-green and the shingled roof is left to weather-finish.

The hall (Fig. 10), contains an ornamental staircase with a central run to a broad landing, where it divides and continues up in either direction to the second story. Archways on either side of the stairs lead to the toilet and rear piazza on one side, and to the service end of the house on the other. The stairs have oaken treads, white-painted risers and balusters, and a mahogany rail. The hall has a paneled wainscoting and this, together with the trim, is painted white. The walls above this wainscoting are covered with a Colonial wall-paper in gray and white, and the whole is finished with a dentilled cornice of wood.

The living-room

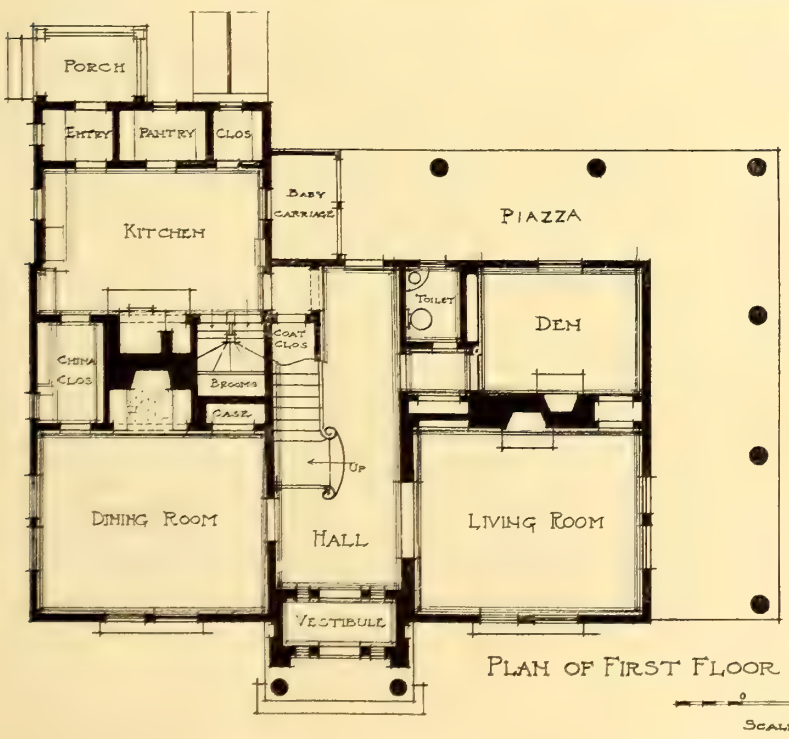
3—The living-room of Mr. Sampson's house

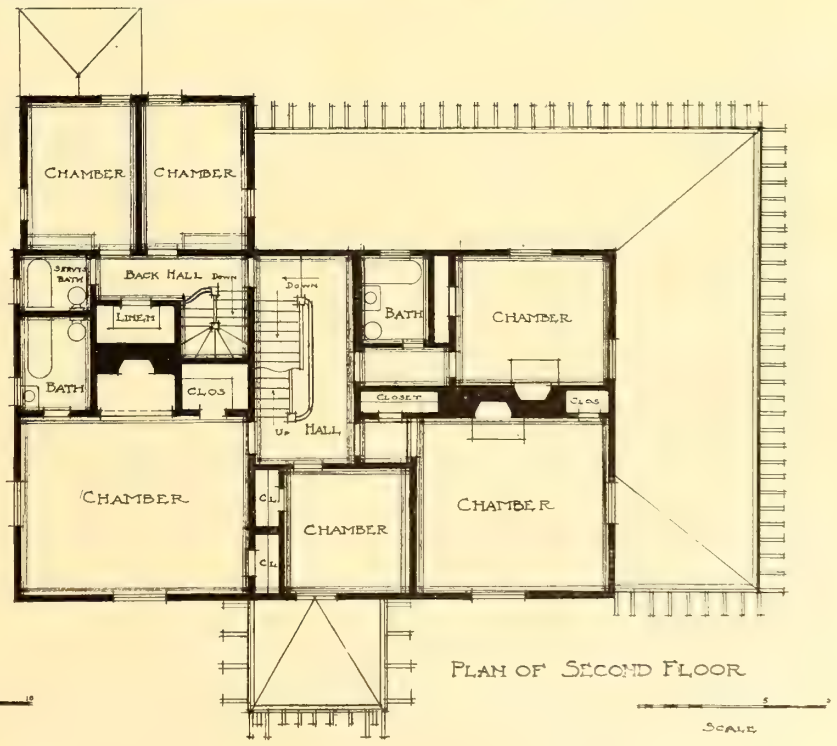
4—Double rows of shingles give a unique effect to Mr. Farnham's house

(Fig. 7) is finished in mahogany. It has a paneled wainscoting, above which the walls are covered with Japanese grass cloth of a golden hue, and the whole finished with a wooden cornice. A soft brown rug in two tones covers the floor, while the upholstery is covered in harmonizing brown shades. Curtains of net are draped at the windows, while at the French windows and doors heavy curtains of two-tone brocade are hung. The fireplace is built of red-faced brick with facing, and a hearth laid in herringbone fashion.

The dining-room (Fig. 8) is treated with ivory-white paint. It has a paneled wainscoting, above which the wall is covered with a green and white wall covering and finished with a dentilled cornice. The fireplace is built of brick with the facings and hearth of the same. The mantel is an attractive one with a low shelf supported on corbel brackets.

The kitchen, of excellent size, is fur-



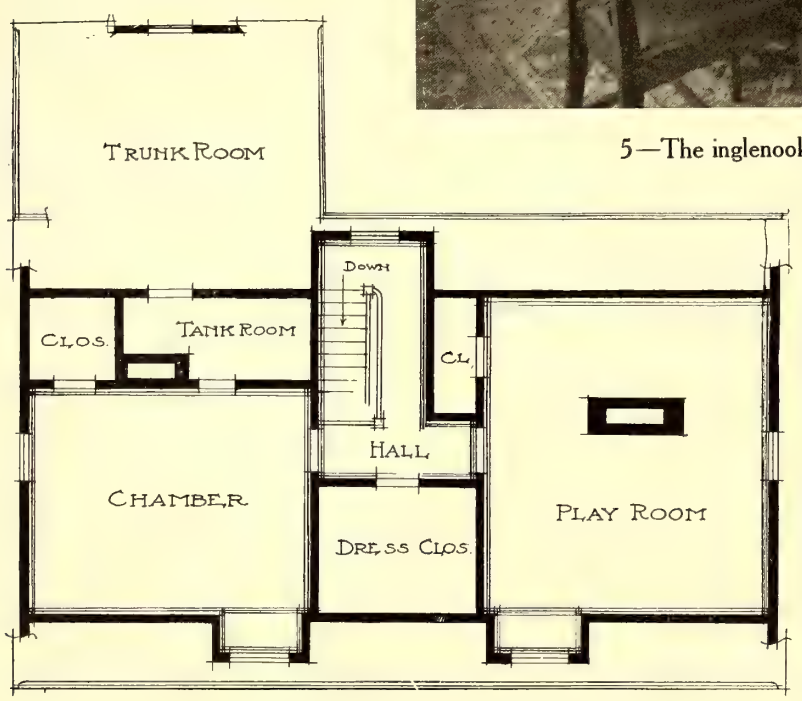


nished with range, store pantry, pot closet, and lobby large enough to admit an icebox. Special attention has been given to the kitchen and its dependencies.

The second floor contains the owner's suite, consisting of two bedrooms, dressing-room and bath. Besides this suite there are three bedrooms and a bathroom on this floor. All the rooms have white-painted trim, and each are treated with one particular color scheme. The bathrooms are tiled and are furnished with porcelain fixtures and exposed nickelplated plumbing.

The servants' quarters

5—The inglenook is a feature of the dining-room in the Farnham house



PLAN OF THIRD FLOOR.

SCALE

and storage-room and the nursery are placed in the third floor, while the cellar, which extends under the entire depth of the house, contains the heating apparatus, fuel rooms and cold storage room.

Mr. James Purdon, of Boston, Mass., was the architect of this interesting house.

When Mr. Farnham decided to build his house (Fig. 4) he also chose the Dutch Colonial style of architecture as its prototype. Mr. Purdon was also the architect selected by Mr. Farnham to carry out his ideas in the matter and to develop, so far as possible, the particular style chosen.

The superstructure of frame is covered on the exterior with matched sheathing and then cedar shingles laid with double courses. A feature of some moment is the living piazza, separated from the entrance porch.

The central hall, extending through the entire depth of the house, is treated with white enamel trim and with green-striped paper on the walls. The staircase is a handsome one with turned balustrades and mahogany rail. Soft silk curtains of a yellowish green are hung to the windows, over other ones of soft muslin.

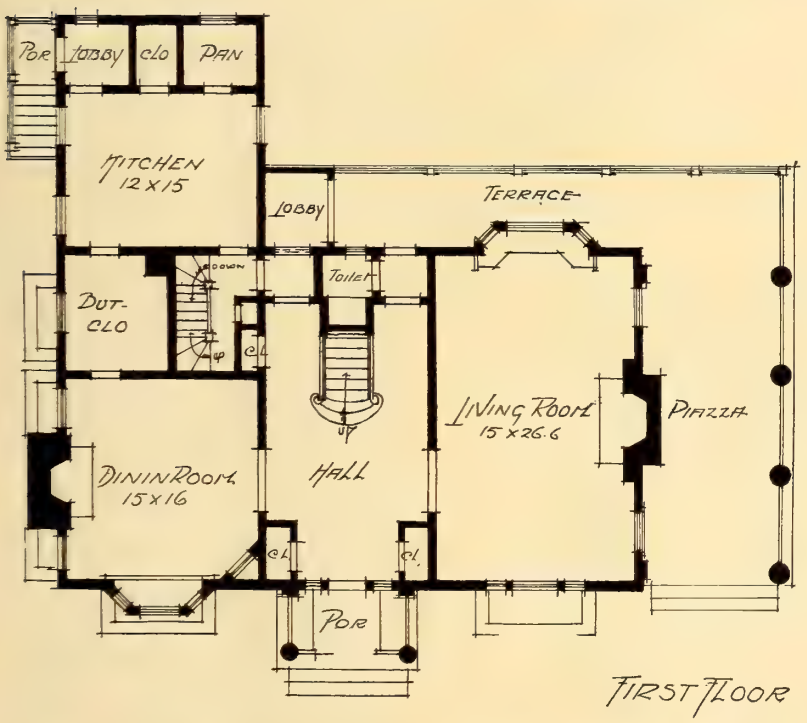
The living-room (Fig. 6) has a white enamel trim. The walls are covered with Japanese grass cloth of a golden hue. The windows have soft white net lace draperies, and in winter a heavier silk drapery of snuff-brown color overhangs the lighter ones of net. The fireplace is built of red brick, and the whole is finished with a mantel of Colonial style.

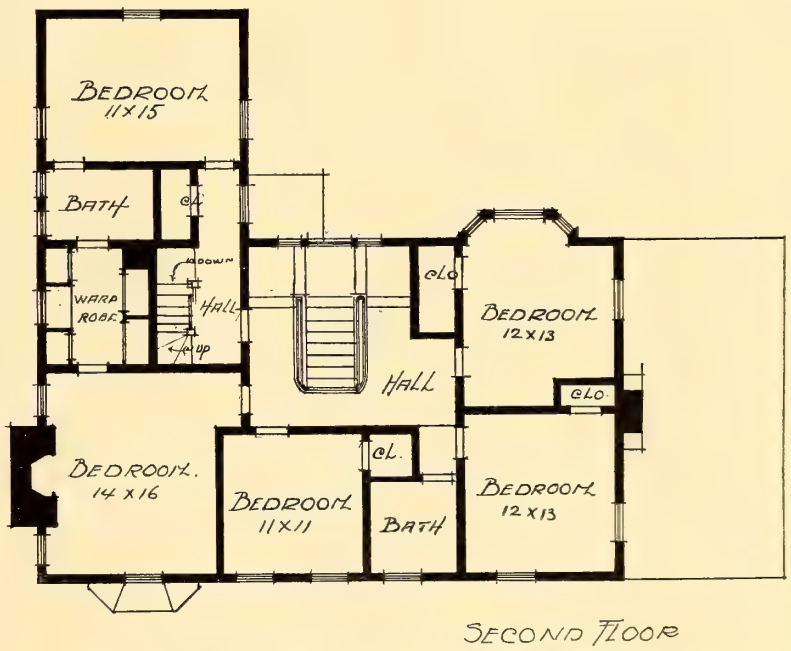
The den has a brown-stained trim and Indian wall coverings in bright coloring, bookcases built in at one side and a quaint open fireplace with a mantel.

The dining-room (Fig. 5) has a recessed inglenook with an open fireplace built of red brick with the facings and hearth of the same. The mantel is paneled and the shelf is supported on corbel brackets. Seats are placed on either

6—The living-room of Mr. Farnham's house has white enamel trim

9—Mr. Thayer's house is in Colonial style with some excellent detail





7—The living-room of Mr. Thayer's house is finished in mahogany

8—The dining-room of Mr. Thayer's house is in white enamel

10—The hall of Mr. Thayer's house has a central staircase

11—The entrance porch of Mr. Thayer's house

side of the fireplace. The walls of both the inglenook and the dining-room have paneled wainscoting to the height of five feet, above which they are covered with a medallion wall covering in a two-tone green.

The pantry is provided with sink and dressers. The kitchen, of large dimensions, is amply provided with a pot closet, store pantry, range, sink and lobby large enough to admit an icebox.

The arrangement of the bedrooms of the second floor is the best possible for light, air and convenience, as each room is exposed on two sides. Each bedroom has a white-painted trim and walls of one particular color scheme. There are four bedrooms and two bathrooms in the main part of the house, while there are two bedrooms and a bathroom over the kitchen extension for the use of the servants, who have a private staircase to the kitchen. Three of the bedrooms have fireplaces, finished with brick facings and hearths and mantels. The bathrooms are wainscoted with tiling and are furnished with porcelain fixtures and exposed nickelplated plumbing.

There is one bedroom, trunkroom and a playroom on the third floor. The cellar under the entire house has a cemented bottom, and it contains the heating apparatus, fuel rooms, cold storage and pantry complete.

Plant Breeding

THE world notoriety which has come to Mr. Burbank from breeding new sorts of plants has lifted him out of the ranks of common horticulturists. The ordinary farmer, however, can carry on the same lists of experiments, just as well, and in a small way as successfully. There is not a farmer in America who can not do something toward improving fruits and vegetables or forage plants. Our agricultural colleges are all at work on these lines. The New York college at Cornell is creating new and improved varieties of grasses. Some of the western colleges are co-operating with Mr. Burbank in establishing edible cacti. But none of these co-operative efforts surpass in results the work done by Mr. Munson with grapes, or Mr. Hansen with plums. The enthusiasm is spreading, so that every summer I receive more and more plants or fruits from some out-of-the-way farmer, who has either cross-bred or selected.

The principle is very simple, and the process requires nothing too scientific for boys and girls. The crossing of two sorts, of vegetables or fruits, is accomplished by transferring the pollen from one variety to the other. The wind does a good deal of this work, in a reckless sort of way, while bees carry the pollen on their bodies. All sorts of insects are liable to do the same kind of work. If you are not very particular as to what you shall produce you can leave this matter of crossing entirely to nature—only remembering that no flower exists which has not been more or less already crossed in its ancestry. As a result the seeds of every fruit will contain the vitality and the peculiarities of two or more parents. However well established any grape or bean may seem to be, it is very likely to show in its children some oddity from the crossing of its ancestors.

If now, in addition to this sporting or natural crossing, you wish to obtain more accurate results, you may remove the pollen from one flower, and in the place of it sprinkle the pollen from some other variety—having selected perhaps a hothouse grape to be crossed with a hardy Concord. When this bunch has come to fruitage you will select the seed and sow it. The resulting vines will give you grapes with more or less of either parent. This will be shown in leafage, in growth, and in fruitage; but every seed, in every grape, will give you a new variety. An apple containing ten seeds will certainly give you ten new sorts of apples. Many of these will revert to old types, but the chances are that we shall get one or more improvements in fifty reversals. Anyone who works at this problem must learn that nature is not over prodigal with the good things she has in store. Gradually, however, we are overcoming this tendency to go backward, and will finally overcome it altogether. By and by the tendency will be very strong to improve, so that we shall have fifty better things to one reversal.

The Dino Collection of Historic Armor

By Isabel R. Wallach

THE collection of armor gathered by the late Duc de Dino, Marquis of Talleyrand-Perigord, and now the property of the Metropolitan Museum of Art in New York, is a revelation of the degree of beauty to which metal work may be carried, and also of the wonderful effects achieved by the medieval armorers. Truth of line, integrity of purpose, and strength of construction distinguish each piece, and bear testimony to the fidelity and skill of the craftsman. Inlay and overlay, chasing and pierced work, damascene and etching, enamel, embossing, and repoussé, crowd every available inch of surface, yet never to the detriment of the grim business of defense.

One of our illustrations is a side view of the plate armor neck piece and chamfron that protected the war horse of Henri II. A front view of the same specimen is presented in the illustration showing a collection of head pieces. The equine neck and head piece illustrated is remarkable for the accurate modeling displayed.

The collection is particularly rich in elaborately etched and gilded head pieces. The helmet-roofs served for reinforcing guards when the marvelous temper of a swiftly descending blade cleft the very iron, or the force of the crashing battle-ax tore its way through the stoutest steel. Many of these pieces bear the emblems of royalty; others were the property of mighty rulers, among them the Medici and the Saxon electorate princes.

The armor in the collection is particularly striking, the various specimens showing clearly the influence of the different periods. One of the accompanying illustrations is a complete suit of armor of Italian make to which the date 1450 may be assigned. This austere garment of steel shows the stamp of tests which have proved its protecting qualities. The suit is one of the few (about four) extant dating from the fifteenth century. It ranks among the most valuable objects of the entire collection. Mounted on the same stand with this suit is an Italian war-ax, likewise dating from the middle of the fifteenth century.

The pierced trefoils and the curved lines in the Gothic suit bearing the date 1490, also pictured in one of the accompanying illustrations, show the influence of the Italian school. The corrugations add strength, a very important factor in a suit that weighs but forty pounds. At the time when this suit was fashioned, the armorer's skill was at its highest. The specimen shows anatomic modeling of unusual quality. Particularly is this noticeable in the armor of the hands, knees and ankles. The flexibility, the graduated thickness of all the plates, and the remarkable temper are qualities that have aroused the admiration of those who may be considered authorities on medieval steel working. After this period, the weight of the armor rapidly increased; its flexibility became impaired, and its decoration belonged rather to the goldsmith's and sculptor's than to the armorer's art. The mailed fist of the figure shown clutches a two-handed sword, Spanish in its origin and wrought some time

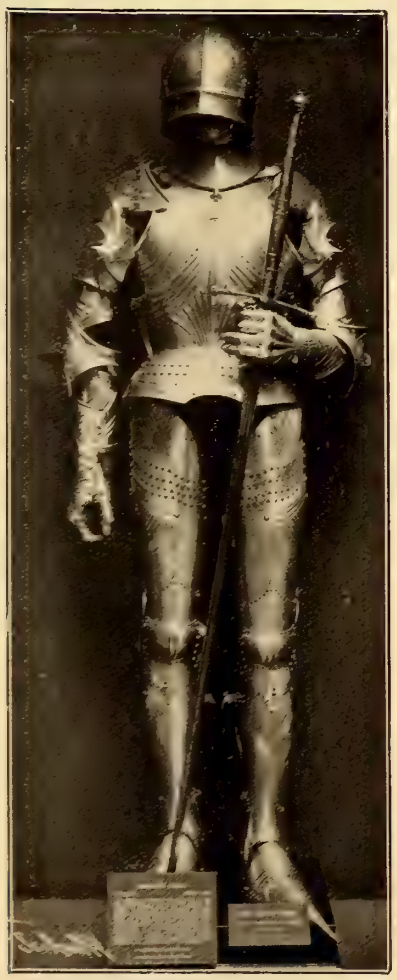
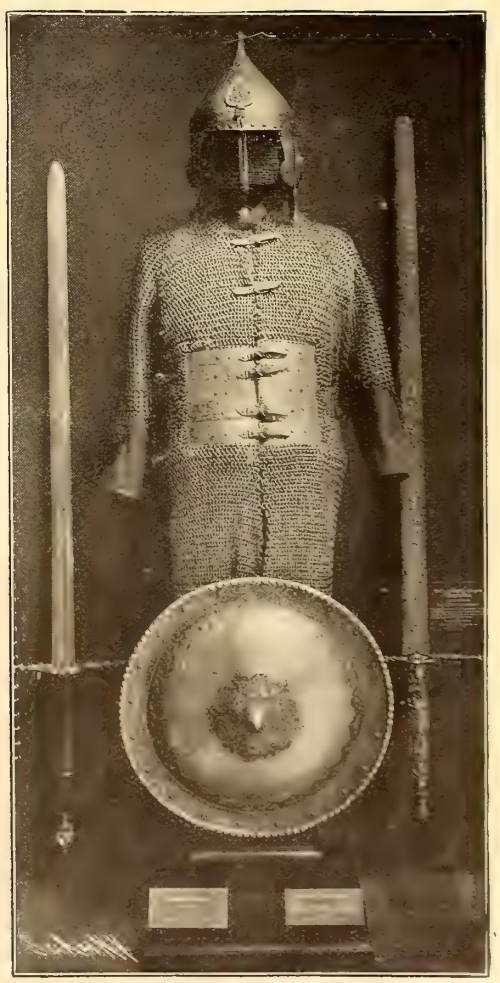


Plate armor of florid workmanship (1490) typifies the best work of the Gothic armorer in the anatomical modeling of steel

Striped armor, black and silver etched, of German workmanship. The shoe and gauntlet are made of separate plates to secure flexibility and suppleness



A Turkish (Saracen) coat of chain mail (XVI Century). The shield is of contemporaneous German workmanship, and probably designed for a Spanish knight

Milanese half armor by Pompeo della Cesa (1590)

closely that of Alessandro Farnese, Duke of Parma, preserved in the Vienna Museum. A Milanese shield (*rondache*), likewise dating from the second half of the sixteenth century, is mounted immediately below the armor. It represents a fierce struggle of mail-clad knights and is wonderfully executed.

A fitting companion piece of the same period, no less elaborate in finish, and even more artistic, is the beautifully etched and gilded half armor signed by Pompeo della Cesa. during the second half of the fifteenth century.

The handsome armor of alternate stripes of black and of silver damascene, also included in our illustrations, is of later date. It is of German manufacture. The shoe and gauntlet are built up of separate plates, conferring the suppleness and flexibility which the swordsmanship of that day required.

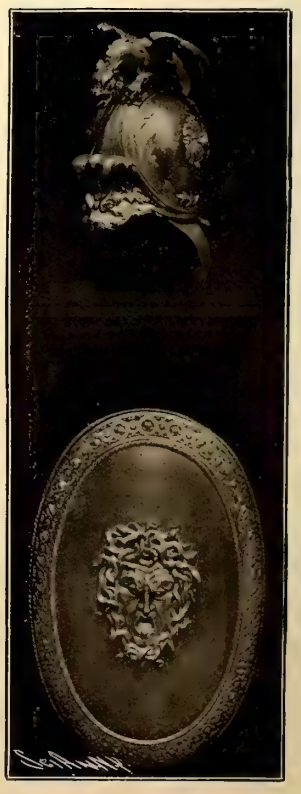
Splendid with gold repoussé is the half armor designed for the great Gonsalvo de Cordoba, presumably about the year 1590. Its gorget is ornamented with the collar of the Golden Fleece. The temper of the metal is unsurpassed. This example resembles

Milanese half armor made by Lucio Piccini for Gonsalvo de Cordoba (1590)

The scalloped edges that peep from under the skirt and shoulder pieces belong to the velvet garment worn underneath. The shield (*rondache*) displayed beneath the armor was made somewhere about the close of the sixteenth century by an Italian craftsman.

The specimen of sixteenth century chain mail illustrated herewith and the helmet above it are Turkish. The shield below is of contemporaneous German workmanship. Both show elaborate gilding and etching. Their juxtaposition gives the student a fine opportunity for comparing the German and Saracen schools. The shield was probably designed for a Spanish nobleman—at least that is what competent authorities surmise. To the left of the armor a German (Saxon) two-handed sword is hung, which was also made about the sixteenth century. Contrasting strongly with the deadly earnestness of this weapon is the two-handed ceremonial sword displayed to the right of the armor. Like the former, this is of German workmanship, probably the product of some Swiss craftsman. It is of earlier date, and was fashioned probably in the second half

A collection of casques and head pieces; the second helmet from the left in the top row is supposed to have been that worn by Joan of Arc



The helmet and shield of Louis XIV

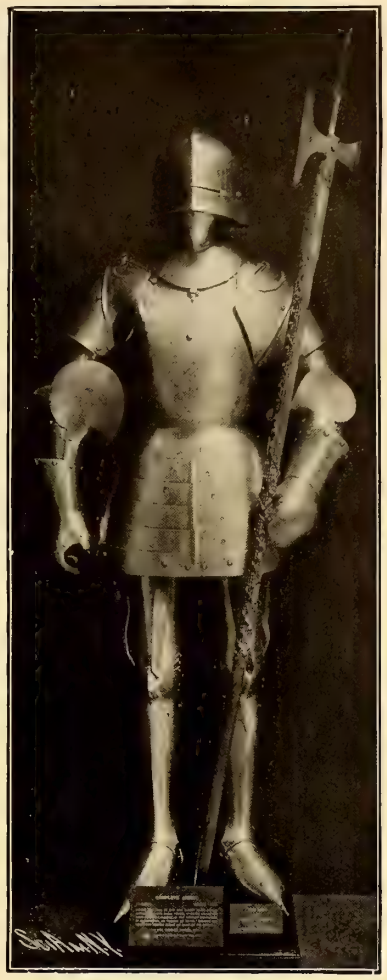
of the fifteenth century. The handle, carved in the purest Gothic style, was originally in another collection. The blade, hilt and sheath, however, date from the same period.

The exhibit of helmets in the collection is most comprehensive. From the simple iron hat, ludicrously suggestive of an inverted kettle, to the shapely and truly royal burganet of Henri II of France, is a far cry. Between them are a dozen different varieties, each planned to protect its wearer from the crushing weapon of a foe. Some are purely classic in shape, and show much decoration; others, like that of the Maid of Orleans, are simple to severity and almost bare of ornament. The gorgeous helmet of Henri II, its sides telling in rich relief of the victory of Hercules over the Centaurs, is part of the gilded armor he wore when, as Dauphin, he visited his royal contemporary, the Emperor Charles V, while living in Madrid. Near it is the chamfron previously mentioned that protected his horse's head, marked with his initial and the date 1539; it is one of the few of the collection that permitted the animal to use his eyes. The majority of the chamfrons utterly prevented the charger from seeing, in order to prevent his shying at the critical moment. There are helmets in the collection that were worn by the bodyguards of Pope Julius III, of Cosmo di Medici, of the Great Elector, and near them Saracen and Turkish casques with their distinctive domes and peculiar visors. These casques are elaborately chased and gilded, but, in deference to the strict Moslem commandment, there is no trace in the pattern of a graven image—only a beautiful labyrinth of arabesque and geometric lines.

Pendants and medallions that decorated the bits and bridles of the horses are displayed by the score. There are also parts of the plate armor that protected the chargers from the lances of enemies.

Important objects of the Dino collection are the shield and helmet of Louis XIV. Just how these and other royal caparisons were permitted to leave their native soil is a question that must embarrass French collectors. The Louis XIV pieces are classic, and their decoration of gilt and bronze of an unusually high order of artistic merit. During Louis XIV's reign it was that the use of armor was officially abolished; for that reason his royal shield and helmet fittingly close a collection of inestimable value to the student of history and of art, and to the layman who finds the living present the logical development of a no less living past.

No less interesting than the armor are the weapons of the Dino collection. One of the most splendid specimens of these medieval weapons is the Papal sword of Sixtus V, emblazoned with the arms of the haughty Albani. Other blades are here of rare Toledo and Milanese workmanship, showing the wonderful skill attained by the swordsmiths of the period. The wealth of decoration lavished upon blade, hilt and scabbard partakes of the goldsmith's art rather than that of the craftsman in steel. Great two-handed swords may here be found of dimension and temper that bear out the tales told of men cleft in twain at a single stroke.



One of the four extant Gothic suits dating from 1450, considered the most valuable in the Dino collection. This suit bears the marks of the armorer's proof-tests

But of all the knightly swords, the most valuable in the present collection, and the one that appeals strongest to our sympathies, is the magnificent blade of Aben Achmet. Sheath and steel are of rare Hispano-Moorish workmanship, resplendent with enamel and gold and silver filigree. It figured in a tragedy accompanying the fall of the house of Abencerrages and the ruin of Granada. Pathetically near the historic sword lies the elaborately wrought Koran case of its liege, Boabdil the Unlucky, last of the long line of Moorish kings to reign in Europe. The pole arms of this period are characterized by brutal savagery curiously wedded to exquisite art. The heavy spiked mace, the enormous battle-axes and hammers, the torturing triple-edged pikes, amply justified the iron sheathing in which the warrior incased himself.

A curious and most interesting weapon is an elaborately gilded dagger, made in Germany in the latter half of the sixteenth century, and carrying a pistol concealed within its blade. The removable tip of the dagger forms the key which, inserted in the knob of the hilt, wound the wheel-lock. The latter is visible through the oblong opening at the upper end of the blade. A flint is attached to the under side of the band of repoussé that bridges the hilt. This bridge is movable, and, as it descends, it releases the spring that revolves the wheel, brings the flint in contact with the wheel, and sends a shower of sparks into the pistol beneath, discharging its bullet. The weapon is ingeniously contrived, and was no doubt highly prized by its owner.

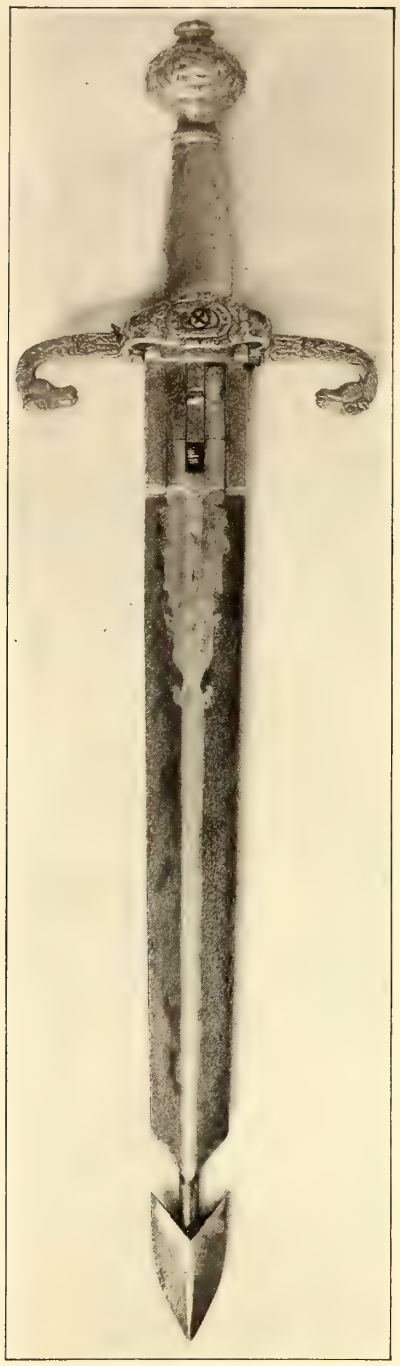
Unlike the dagger, the calendar hunting-knife, dated 1540, carries its firearm openly. Its German maker must have been proud of his clever handiwork, for boldly has he made it declare: "ICHENN .·. HAD .·. DISSE .·. KOLLENDER .·. GEMACHT" (Ichenn made this calendar.)

There is also exhibited a sword-cane once the property of Philip II of Spain. It has a Toledo blade of wonderful temper. Still another remarkable piece has a pistol dated 1612, which displays a complete double battery. The mechanism of the ingenious wheel-lock is clearly seen.

The chamfron (horse's head piece) worn by the charger of Henri II

The arquebuses and pistols show how far the love of ornamentation was carried. Inlay of pearl and ivory and overlay of gold and silver, repoussé and incised work cover the stocks. The metal work of the weapon, as well as its wheel-lock, key and powder flask, show treatment akin to that of the goldsmith's art.

Among the smaller weapons are specimens interesting alike



A curious dagger and pistol combined

for their beauty and ornament, and for the ingenious devices that insure the attainment of their fatal purpose. The early firearms attracted much attention, especially those in which the mechanism of the old-time wheel-lock is visible. Prototypes crude and curious are here displayed of our modern rifle and double-barreled gun.

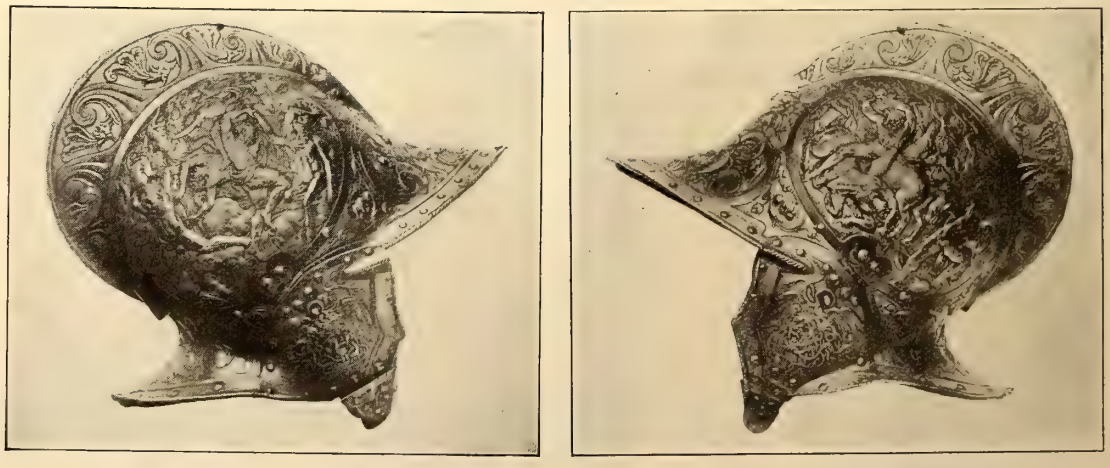
The finest specimen in the Dino collection, so far as weapons are concerned, and, indeed, the finest specimen of its kind in the world, is a sword fashioned during the reign of Francis I. The hilt is wound with braided gold wire of extreme fineness and ends in the bust of a woman, the modeling and carving of which are perfect. Similar busts terminate the cross-bar, and a coiled serpent guards the end.

Wherever one turns in viewing this wonderful collection, one is struck by the marvelous wealth of it, no less than by the enthusiasm and erudition which the Duc de Dino must have possessed. It is not that he has here and there succeeded in obtaining some unique example of an interesting period; it would seem rather that whatever was priceless and to be desired became a part of his collection. The representative object of any period is not merely a contemporary specimen; it is rather the one thing of its kind which is the most perfect, or to which romance or history most closely attaches. Moving from case to case of the collection, one can not help noting how fashion changed in these steel garments, even as it does in ordinary dress to-day. The earliest suits show shoes ending in a cruel spike, with other spikes projecting from the arm pieces. A swift thrust from a foot or elbow thus armed was likely to leave an indelible mark. Later the square-toed shoe, supple and flexible, by reason of its many plates, came into favor. It is to be seen in the royal suit of Philip II of Spain, of bloody memory in England and the Netherlands. Over the heart is the cross of Calatrava and d'Alcantara. It is hard to reconcile the meaning of this symbol with the ruthless persecution its wearer instituted in the Protestant lands he sought to conquer. A large portion of this richly decorated suit, as stated by Baron de Cosson, formed a part of the collection of the Madrid Armeria Real. From this armory nine pieces of this suit were abstracted in 1839. The backplate, the breastplate (with its dependent pieces), footplate, and the defense of one forearm are added from a similar suit. The latter pieces formed part of the harness of which parts are still preserved in the Madrid Armeria, which appears to have belonged to a member of the family of d'Onata. The suit was made in Germany about 1554.

Still another suit belonging to Philip II is also displayed. Philip IV was painted in this armor by Titian. A century later Rubens used it, and likewise Velasquez in his portrait of Count Benavente, now in the Prado Gallery in Madrid. This armor was fashioned by a German artist about 1550. The numerous pieces of richly decorated armor in the particular case containing the suit and in a neighboring case formed a complete panoply of which the parts could be changed according to the needs of its wearer. In the specimen illustrated, the tournament plates that reinforce the armor of the shoulder and face are added. The suit was probably made by Colman of Augsburg. The sword hilt in the left hand of the armor is of Spanish make, and dates from the middle of the sixteenth century. It is the work of Sohagun el Viejo of Toledo, the swordsmith of Philip II.

A very rare specimen is a florid and flamboyant suit with its grotesque visor mask. The puffing and slashing of the court dress of the day (1530) is imitated in the metal, and the anatomical lines are followed with admirable fidelity, even to the instep and gauntlet. Every vulnerable point is guarded; yet nowhere is the movement of the joint or muscle hampered in the slightest degree. The lightness of the plates indicates that the armor was designed for occasions of ceremony. The human face visor is rare. Baron de Cosson finds evidence regarding this armor (one of the most valuable of the collection) as having been a gift of the Emperor Maximilien to one of the dignitaries of his court. The left hand of the armor holds a Spanish sword made during the sixteenth century.

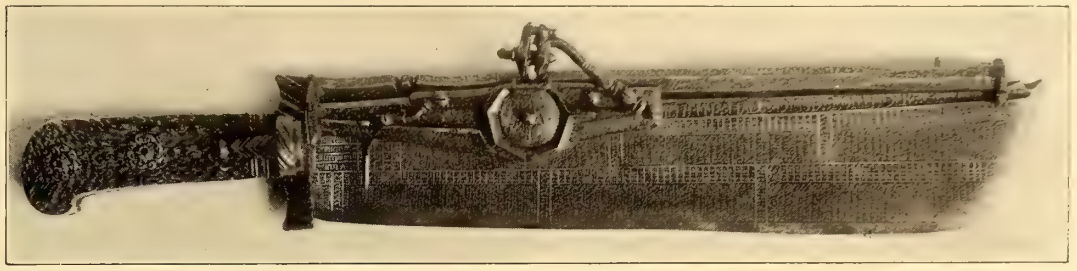
A sword of Aben Achmet



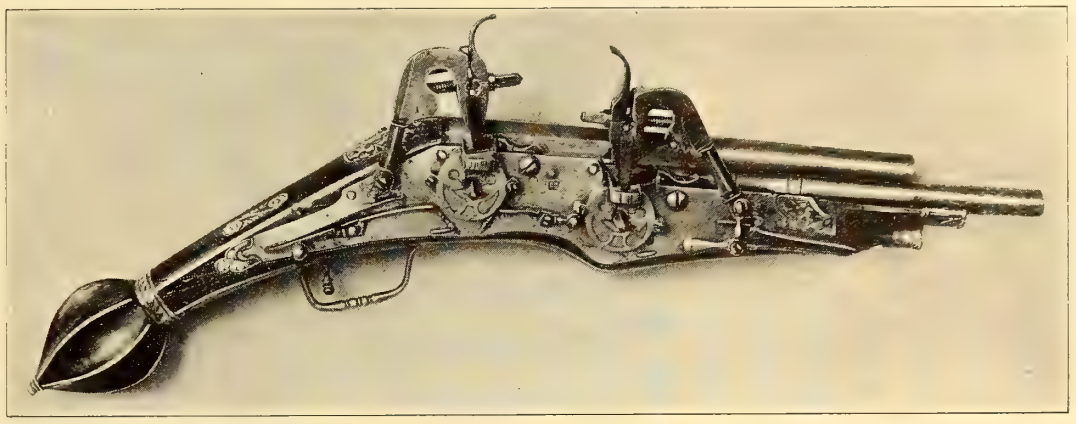
The helmet of Henri II, seen from both sides. Its rich ornamentation pictures the heroic deeds of Hercules

The flutes of this Maximilien suit imitate the ruffs and slashes of the court dress of the epoch (1530)

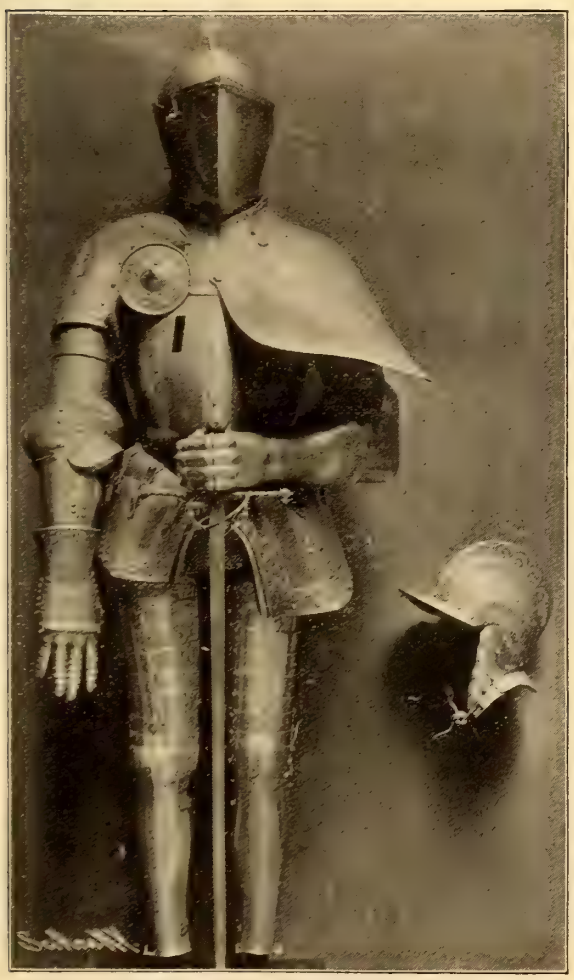
A remarkable harness is the jousting armor made by a German craftsman about 1500. This is an example of the most specialized form of jousting armor. Its weight is nearly ninety pounds. The helmet, weighing twenty-two pounds, was bolted to the breastplate, and is of sufficient size to enable the wearer to turn his head. The armpits were protected by large rondelles, and a shield fastened at a single point served as a mark for a lance thrust. The lance of this period was sometimes over sixteen feet long and weighed nearly forty pounds. It could not be held very well, but had to be balanced between a separate "fork," attached to the breastplate, and a long arm riveted to the backplate. Such was the weight of the armor, and the rapidity of the charge, that a lance which struck squarely would be splintered.



Calendar hunting knife with pistol, which marks the transition stage to firearms

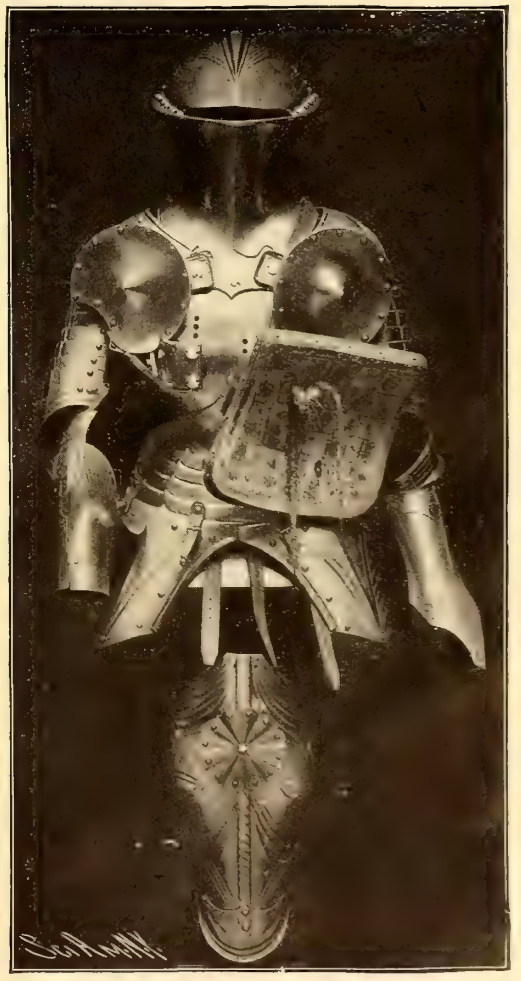


An early double-barreled firearm in the Dino collection



Armor made by Colman of Augsburg about 1550. The tournament plates for reinforcing the armor of shoulder and face are added

A large portion of this highly-decorated suit belonged to Philip II. of Spain. It bears the cross of Calatrava and d'Alcantara



An example of the most specialized form of jousting armor. Its weight is nearly ninety pounds The helmet is bolted to the breastplate

The Use of Anesthetics for Plants

By S. Leonard Bastin

NOWADAYS the gardener has to adopt all kinds of ingenious devices in order to obtain the flowers for which there is such an unceasing demand. One of the most interesting of those methods which have been recently introduced is the system of the anesthetization of plants, in order that they may come the more quickly to perfection. Some years ago, Dr. Johannsen, of Copenhagen, carried out a number of elaborate inquiries in order to find out the effect of chloroform and ether upon vegetable tissue. After a long series of experiments he was able to show that certain plants, when submitted to the influence of the vapors of these drugs while in a dormant condition, behaved in a curious way afterward. It seemed that the anesthetic intensified their restfulness, and brought about a remarkable activity when ordinary growth was allowed to be resumed. Moreover, it was noted that the all-round excellence of the plants so treated was greater than in the case of specimens which were in a normal condition.

Lily of the valley ready for anesthetization

It soon became evident that a discovery of real commercial value had been brought to light. The production of flowers is such a serious business nowadays that anything which will save the grower time is a matter of great importance. Further experiments went a long way to indicate the lines on which the treatment would be likely to be most successful. It was found that lilacs, azaleas and especially lilies of the valley were plants which were amenable to the ordeal. As well, many sorts of bulbous species seem to repay for the trouble by an accelerated growth and an enhanced beauty of development. Of course the expense involved in the system is so trivial as scarcely to be taken into consideration.

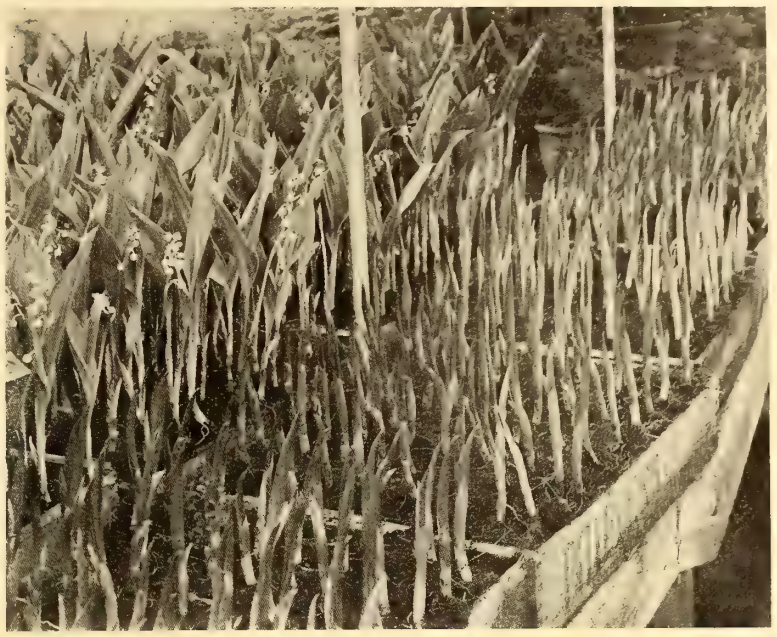
Young, well-budded lilac, with roots wrapped ready for anesthetization

The mode of procedure is on the following lines. When the plants or roots are in a perfectly restful condition they are taken in hand for treatment. A perfectly airtight box or tin case is obtained, and all the specimens are stored away in the bottom of the receptacle. From the inside of the lid of the case is suspended a smaller vessel, and it is into this that the spirit is poured. It is necessary that the temperature throughout the proceedings should not fall below 62 degrees Fahrenheit. As soon as the chloroform or ether is placed in the vessel the lid of the case must be closed down and is not again to be opened. Of course, the vapor from the drug being heavier than air sinks to the bottom of the box and mingles among the roots and plants lying there. For a period of forty-eight hours the case is left, at the end of which time all the specimens are removed, planted and grown in the ordinary manner. No very great degree of heat appears to be desirable beyond that available in a well-warmed glasshouse.

At first the anesthetized plants are only exposed to the light to a small extent. It is very soon, however, that the advantage of the new treatment becomes apparent when the specimens are compared with those which have been grown normally. A few days elapse, and the plants seem literally to jump into life; the buds burst open, the leaves

Airtight box for anesthetization of plants. The chloroform or ether is placed in the receptical at the top and the heavy vapor sinks to the bottom

begin to expand, and in a short while the flowers put in an appearance. The actual saving of time brought about by the adoption of this method is very considerable. Lilies of the valley treated with ether were in full bloom in a fortnight from the start. Some azaleas, which were potted up after exposure to the anesthetic, were out on March 8, although they had only been growing from the 25th of February. Specimens which had not been treated at all, and were started at the time of the others, did not come to maturity until at least a fortnight later. In the case of lilac and other plants the saving of time was equally remarkable and satisfactory.



The anesthetization of lilies of the valley. Note difference between plants in foreground and those at back

One point upon which there has been some misunderstanding among gardeners is that the chloroform treatment will make up deficiencies in the quality of the plants. This is a very mistaken idea, for unless the dormant specimens are well budded good results can not be looked for, albeit the vapor appears to bring about a finer development. The different species appear to succeed best under a special anesthetic, and it is a matter of no little trouble to find out the best drug to use. Thus it is found that ether seems to be best suited to the requirements of lilac and chloroform in the case of azalea. Any amateur enough interested to take the matter up will find a most promising field for investigation in this question of the plant and the anesthetic. The expenses involved are, of course, very small when the matter of outfit is considered. A certain amount of care in the handling of the chloroform and ether is necessary, as it should be remembered that these are volatile and highly inflammable spirits.

In France the treating of lilac with anesthetics at the present time has developed into a large industry. The new method has entirely overcome a difficulty which has always troubled the forcer of this plant in the early months of the year—that is, the matter of leafage. Lilac could be induced to develop its blooms with heat, but the plants would not develop their foliage. After the specimens have been anesthetized the leaves are produced in the greatest profusion at the same time as the flowers. A similar result is to be noticed to a large extent in the case of lilies of the valley. On the whole this method offers many interesting opportunities of study that may be turned to account.

A Few Neglected Fruits

By E. P. Powell

A WINTER in Florida is always made more pleasant by the opportunity of obtaining a plenty of Japanese persimmons. It is hardly understood by Americans that the native persimmon can be grown as far north as Boston, and probably Concord, or possibly into Canada. I have it growing at Clinton, near Utica, New York State. This fruit is capable of not only enduring our climate, but of very decided improvement in quality. I obtained cions of the most improved sorts, as grown in Missouri and in Virginia. All of these took well when grafted in poorer stock. Among these perhaps the best was the Josephine, and I can tell you where to get Josephine cions or possibly roots. Send to T. V. Munson, Denison, Texas. He has taken a good deal of interest in disseminating this improved sort. I also obtained a variety which was nearly seedless. The grafting should be done rather late in the season—a couple of weeks after the grafting of apples and pears. It would be a good thing for our northern gardens to undertake the growth of this fruit. The tree for shade is exceedingly beautiful, and the wood is American ebony—hard and beautiful for polish. I obtained from one tree, of about thirty feet in height, two or three bushels of persimmons annually. The leaves are bright green, putting out late in the spring and dropping early in the fall. After the leaves have fallen the fruit makes the tree exceedingly beautiful with its golden balls.

The Japanese persimmon is not hardy north of, perhaps, Georgia, although I believe some varieties stand the test fairly well up to the Ohio River. Efforts have been made to bring from Corea varieties that will endure the zero climate. The leaves of this persimmon are larger, but not so symmetrical and beautiful as those of the native sorts. I believe that no marked success has followed efforts to improve the imported varieties. The Japanese varieties are four or five times as large as the native, and ripen from September until January. The flesh is usually a bright orange color, sweet and spicy, and to be eaten with a spoon. Some of these imported sorts are seedless, and others are as seedy as our native varieties. Like our own sorts, they are very astringent when picked before ripe, as they must be in order to reach market. I pick my native sorts all the way from the first of September to the last of December—storing them in baskets in cool rooms until they soften. The Japanese dry the persimmon, like figs, without the addition of sugar; and this dried fruit, as I have tasted it, is as sweet and rich as Smyrna figs.

I have tested the pawpaw also in central New York, and find it as hardy as it is in Ohio and Indiana. I have also seen it growing in the river bottoms of Michigan. The leaf is hardly distinguishable from that of the native persimmon, but the tree, instead of growing thirty feet high, makes only a large bush, ten or twelve feet high. A peculiarity of the pawpaw is its fondness for water. A drought will either ruin the crop altogether or spoil the flavor. The shape of the pawpaw is like a banana of three to five inches in length. The skin is very thin, and the contents are like whipped and sweetened cream. The blossom is very peculiar, very large, and chocolate-hued. The fruit grows in doublets and triplets, and sometimes in bunches of four.

A Seventeenth Century Homestead

By Alice M. Kellogg

THE most ardent lover of antique furniture never realizes the full potency of its charm until he sees it suitably environed.

It is not uncommon to find, in New England homes, valuable and extensive collections of old furniture, but their significance is often lessened by the addition of modern furnishings of inferior type. The architectural setting, too, is an important factor in assisting or dispelling the old-time illusion created by furniture of an early period.

In a Massachusetts homestead of the seventeenth century all the attributes that are essential to a unified, convincing background for old furniture are happily present. Of our up-to-date improvements only the actual necessities for comfort, in plumbing and heating, have been admitted, and, undisturbed by alien surroundings, the historic and pictoral atmosphere of the past pervades the premises.

From the date of construction in 1690 and its location in the Province of Massachusetts Bay, one might imagine the house to be identified with the excitements of Puritan times; but its record is unvaryingly uneventful except that its generous roof-tree sheltered on various occasions several people of note. One of its unique claims for attention, and the probable cause of its good preservation, is its occupation for nearly two hundred years, in fact until the present tenant's possession, by successive generations of one family. In its original state the homestead comprised eighteen rooms and was without the "chaise house" at the right. Another addition is the classic front porch, which may have been inspired by a visit to Salem and a study of its late-Colonial doorways.

The substantial framework of oak was upheld by walls of twelve-inch thickness which were formed by layers of brick. This sturdiness of structure was intended for a protection against the attacks of the Indians—so say some chroniclers—or for resisting the bitter winds of winter. The window glasses were the smallest oblongs made and their separating bars of wood were thick and shaped by hand.

The exterior coloring at the present time is a pleasant gray on roof and sides, with trimmings of white paint and blinds of a dark green.

A portion of the interior woodwork has been untouched by any finish except the housewife's cleanly care and the darkening of time, a combination that has produced an indescribably soft brown tone and rich gloss. In the other rooms and in the hall the woodwork is painted white.

The projection of the front portico has contributed a space similar to a vestibule to the contracted lines of the entrance hall, and the addition of side windows increases the lighting advantageously. The wallpaper in the hall is a Colonial design in neutral colors. A miniature copy of a tall "grandfather's clock" stands on a

The front porch

shelf opposite the entrance door.

Those who are familiar with one of the earliest house plans of our forefathers understand the compact placing of one spacious chimney in the center of the building. This gave openings into the kitchen or living-room at the back of the staircase and into a room at the right and left of the front hall. At the present time the west chamber, at the right, is made into a dining-room. The low, white-painted wainscot is constructed of solid planks, and the wall space above is papered with a rose-trellis design. The dining table is a rare specimen of a style that was in favor before our modern extension came into vogue. Its center is a drop-leaf table that, for occasions of extra entertaining, could be enlarged by joining to it at each end a side table with rounded fronts. The legs are of the tapering pattern of the late eighteenth century.

A mahogany secretary with tambour fronts has a cabinet for china resting on the upper part. The Sheraton card table between the windows is one of a pair of this favorite model.

Old screen made from church panels

Another view of the dining-room shows a sideboard on Sheraton lines, with an open cupboard fitted into the corner wall for holding china. The old lamps on the sideboard are a part of a large collection of pewter, brass and glass that has been fitted up and put to use throughout the house.

The east chamber is a parlor, but not in the formidable sense of being a "keeping-room," as a feeling of comfortable habitation emanates from the low ceiling, deep-silled windows and broad fireplace. In this room are some chairs of different patterns, the Governor Carver and Windsor that appear in the illustration, besides an upholstered Martha Washington arm-chair of commodious pattern, and side chairs of Chippendale and Heppelwhite design.

The card table under the shelf-clock has a plainer leg than the one in the dining-room, but is relieved by lines of inlay. Two very old metal lamps without chimneys or

The exterior of the homestead

The fireplace in the parlor

The front staircase

shades are reverently cherished in this, the "best" room. The brass andirons are a quaint, rarely seen shape. The "Portrait of a Gentleman," standing temporarily on the floor, is painted in oils on a piece of wood.

In the living-room the wall space above the wainscot is covered with scenery paper. The fireplace, with its cupboards above and brick oven at the right, has an interesting group of oldtime fireirons and andirons, toaster and waffle irons, crane and copper kettle, pewter plates, foot-warmer and warming-pan. The Windsor arm and rocking-chairs and the gate-leg table are as attractive a group for cozy comfort as may be found in our own day.

The dining-room and its antique furniture

The Sheraton sideboard and corner cupboard

The wood-paneled screen is a memorial from the oldest occupied church in the United States, and was devised by the present occupant of the old homestead from the pew doors of the famous meeting house when its interior was remodeled.

Among the chambers upstairs one in particular attracts the antiquarian who is interested in the customs of a past century. This is the front room, where a small platform was built under the high window to enable the housewife while at work over her sewing table to glance down the road and enjoy whatever was passing. The woodwork around the fireplace is set in panels to the ceiling without a mantelshelf. An old washstand has a complete toilet set in blue and white china. The high chest of drawers with carved sunburst is matched by a lowboy that is used as a dressing-table. The four-post bedstead is repeated with and without canopies in all of the other rooms used for sleeping.

Many of the bedroom pieces of furniture were made by those who lived in the homestead, and one tall chest of drawers must have originated in the room in which it stands, as it is too cumbersome to be moved through the door.

With so much of exterior interest in this remarkable old homestead, one would be disappointed if its environment did not reflect something of the peacefulness of accumulated years, the simplicity of its Colonial origin.

So many times a glimpse into the olden times is despoiled of its pleasure by a modern or inharmonious setting. Sometimes by choice, often by necessity, our time-worthy structures are surrounded by detracting elements in nature or architecture.

The home just described is fortunate in being out of the line of city growth, although it stands almost in suburban distance from the largest city in Massachusetts. Tall trees are at its entrance, and its ancient acres encircle it on every side. Uncompanioned by other habitations, it has a primitive seclusion of its own.

We of the present generation often long for the "simple life," but how many of us, given the opportunity, would lead it as faithfully and consistently as the owners of the seventeenth century homestead we have tried to describe?

The bedchamber and its platform

An old-world water jar in a sheltered corner

A Swiss cottage in the woods

A Wood Garden

By Phebe Westcott Humphreys

A WOODLAND often presents opportunities for decorative utilization which may well be described as a wood garden. An interesting development of this somewhat unusual type of exterior decoration is afforded by the country seat of Mr. H. H. Battles at Newton Square, Pa. After a short drive through the home grounds, and past the stately old country mansion, the main driveway leads down into one of the most alluring stretches of woodland in all Delaware County, a woodland that has for centuries been taking on that perfect charm, serene and mature, which only time and the deft touch of unhindered nature can accomplish. Here are beautiful old vines climbing far up into the tree tops, and clumps of low-growing evergreen shrubbery, while spring-fed woodland pools in the valley windings mirror lordly old pines reaching out their evergreen branches from the steep hillslopes above.

Rockery and well

Simple beauty in the woodland dell

In many alluring spots "unhindered nature" has accomplished all that could be desired. In other places, where it has been necessary to remove briers and underbrush, some fascinating glimpse of an old world garden has been introduced. Although architecture and garden craft have worked wonders in some of the open spaces, it is the succession of garden surprises, discovered in secluded sections, that appeal most strongly to the imagination and tempt one to explore every foot of the magic woods.

Fortunate is the visitor to this beautiful country seat who on his first visit to the woodland gardens is charmed with the sight of an ox-team slowly wending its way from one of the woods-roads, a genuine old-fashioned country cart drawn by two plump, well-groomed oxen and driven by a sunny-faced Scotchman who beams goodwill on all visitors as they admire his charges. Not only are these splendidly developed specimens of cattledom the particular pride and delight of the owner and also of all the employees of the estate, but neighboring property owners declare them the finest team in Delaware County, and the appreciative garden craftsman must admit that this old-time country acquisition provides additional charm for the woodland that could be secured in no other manner so effectively.

On the right of the drive, on entering the woods-road, is a broad lake fed by a woodland spring; and the water reflects the native growths—wild flowers and bog plants along its margins, with the aquatics natural to the locality ornamenting its surface. Any attempt at artificial water gardening would have completely spoiled the effect, but the natural woods lake holds a charm of its own; and where the stream which feeds it passes beneath the roadway, a simple and artistic bridge of rustic work has been constructed. To the right of the lake is "The Abbey," fittingly named from its picturesque seclusion among the trees, and presenting an ideal spot for retirement and meditation. This one feature of the wood is a study in itself, in showing what may be done in transforming the rusticity of ancestral springhouses or icehouses on the home grounds into cool and inviting summer houses, with rustic-railed porches and comfortable lounging places.

A glimpse of "The Rockery," with its Japanese lantern and its wild gardening, next confronts the visitor threading his way through the woodland walk; and a rustic spring just beyond is reached by log stairs, with a comfortable bench for resting beside the cooling waters. "The Crow's Nest" is well named, as it is not merely a tree seat reached by a single flight of rustic stairs, but a succession of "nests" or landing places supported by fine old forest trees, and presenting attractive vistas through the trees with every turn; when the broad landing—the real tree room—is reached

Florentine pottery and garden seat

The ox-team is a distinctive feature

A real bit of old Japan in the woods

The crow's nest in the trees

one may rest among the tree tops, secured from harm by the high, firm railing, which also serves as a decorative feature.

Probably the most attractive characteristic of all this woodland garden, or "garden of surprises," is the "Swiss Cottage" nestled in an open space in the heart of the woods. One can well imagine that he has stumbled upon some hunts-man's lodge in a secluded mountain fastness when the quaint and picturesque log structure is discovered—possessing the ornamental features which distinguish the Swiss cottages, combined with the substantial log construction of the mountain woodlands. The conception is still further emphasized by the rugged grouping of rocks and boulders about the "cottage"; and only the hardy ferns and natural wild flowers are grown in the rock crevices.

There has not been the slightest attempt toward mere display throughout the entire extent of the woodland; neither has its beauty been left to haphazard, but is the result of intelligent study by experts. Each distinct view, each charming study is in itself complete; and so perfectly does each bit of decoration fit in and blend with its surroundings that it appears to have grown there naturally, an indispensable part of the whole. The plans of this extensive estate, lying off from the West Chester pike, may be studied to good advantage in the decorating of other suburban woodlands, and many country estates where heretofore little thought has been given to this method of home beautifying may have their decorative value doubled by a little intelligent study and slight expense in the development of the garden grove or an adjoining woodland.

The country home, in fact, that possesses a garden grove, or one adjoining a suburban woodland, has within its reach fascinating possibilities in rural decoration, when properly developed. This woodland decoration has recently become a charming fad in many localities. Not only are all the old forest patriarchs carefully preserved, fresh growths nurtured, with the unsightly underbrush cleared away and the woods made habitable, but a step farther has been taken in introducing decided novelties in the form of woods decoration. A drive through such suburban districts will frequently tempt one to leave the public roadway to explore fascinating woodland roads, where the finest of the old trees have rustic stairways leading up to secluded tearooms, built in their wide-spreading branches; where bits of Florentine pottery and roomy marble garden seats, imported from sunny Italy, call to mind the garden magic of the villa-clad hills and woodlands of ancient Florence; where walks cut through stately avenues of trees remind one of the famous cypress alley of the Boboli garden, and intertwined branches of trees, forming archways over secluded walks, vie in beauty with the ilex-walk of the same celebrated Italian garden; where tall Japanese lanterns of stone are set, seemingly to light up dark places in the turns of the winding roadways, and to guard alluring bits of Japanese landscape gardening. In fact these woodland gardens may well be called "surprise gardens," so varied are the quaint types of old world attractions introduced, and so frequently does one come upon some new and delightful surprise at the curves in the drives and walks of the home woodland.

In various localities this feature of country seat decoration has been quite pronounced during the past few years, especially in the development of natural features and the ornamenting of woodland pools and streams with rustic bridges.

Rustic bridge over the woodland stream

Nature's Traps

By Charles F. Holder

THERE is a small army of hunters in this country of whose success the average citizen hears but little. They hunt with pick, hammer and shovel and bring down game a million or a dozen million years old. A modern goose or tiger interests him not at all, but a goose a million years old will lure him on from one region to another in a quest filled with hardships, whose results are seen in all the great museums, in the restorations of the giants which lived in ancient days.

These hunters of bones become remarkably expert by studying nature, and among other things they rely upon certain curious traps which have entombed animals untold thousands of years ago. They are of many kinds, but, as a rule, they are marshes or bogs, quicksands and lakes, or pits of liquid or semi-liquid asphaltum. If a bone hunter can locate one of these he is sure to be repaid by finding a golgotha. In fact, ancient quicksands are the most common, but not always easy to find, as who would think of looking for one on the face of a cliff forty or fifty feet above a river? Yet I have seen such a one not far from the little town of El Toro, California. Here a little river or creek still runs into the sea, and in the thousands of years of its existence it has cut down ten or twenty feet, or more, into the soil and flowed on quietly with no suggestion of a trap to deer or any animal that might stand in its waters to drink.

In the great asphaltum lake of Trinidad is one of the most remarkable traps in the world, containing in its black heart the remains of countless animals which in various ages have been caught in its treacherous folds. While it is difficult to conceive a lake of asphaltum or tar, this is a lake in every sense of the term. It covers over one hundred acres, and is really one of the wonders of the world. Its surface is as black as ink, broken with pools of inky looking material formed of soft bitumen, with here and there bubbling spots or craters and cracks from which issues a disagreeable odor of sulphuretted hydrogen. It is altogether an unpleasant sight, and almost seems to have a life of its own, as no matter how much may be taken it oozes up again and the surface is again smooth. Small birds and insects, and even herons, are to-day caught in the openings, fall and become absorbed by the black mass. In its depths, where sections have been removed, the remains of countless skeletons have been found, telling the story of the trap that for ages has been storing away its victims, holding them down in its oily depths.

There are a number of such traps in the United States. An interesting one has been known for fifty years in Southern California. It is a small lake or deposit of liquid asphaltum, midway between the City of Los Angeles and the ocean, in the shadow of the Sierra Santa Monica range. There is every evidence of great age to the lake. I saw this lake first in 1886. It was from a distance an innocent pool, and about it were white herons and curlews. The old ranchers considered it a dangerous trap for their cattle, and it was said various animals had been lost in its depths. At that time the great oil industry of Los Angeles had not been started, and the deposit of tar and asphalt did not attract much attention, as it was known that there were other similar ones in Southern California—one in Ventura, another north of Santa Barbara, and one out at sea, from which oil oozes up, so that a great patch of water is always smooth. Off the port of Redondo there is an asphalt spring, and the beach is often littered with tar that is washed ashore. Such quantities are found at times alongshore that the rocks are splashed with it, and large turtles caught sometimes have their mouths full of it.

The Los Angeles "trap" is found near the electric line between the towns of Sawtelle and Hollywood, in sight of the ocean. Without doubt it is one of the most valuable traps to science in the country, as possibly for a million years it has been in active operation, changing year after year in density, according to the heat, the slimy, sticky mass bubbling up to entomb and trap various animals. The asphalt in some places appears to be made up almost entirely of bones that have been accumulating for ages, and paleontologists have found that many of them relate to a past age. The quarry has been excavated in places to a depth of twenty feet, and doubtless bones and perfect skeletons might be found at greater depths.

This innocent pool has lured animals into its oozy depths for countless ages; ducks, geese, herons, cranes, shore birds of every kind, insects—all the small animals of the section that would go down to a pool to drink have been caught and trapped. Coyotes, wild cats, bear, wolf, badgers, weasels, gophers, civit cats, skunks, coons—all have been caught here. Then we enter the past ages, as here is the skeleton of the big saber-toothed tiger, a contemporary of the mastodon and mammoth, evidences of both of which have been found here. In 1887 I saw the blackened tooth of a mastodon, said to have been taken here. From the number of excellent skeletons of the saber-toothed tiger it is evident that at one time the animal was very common in Southern California. The animal was, if anything, larger than the Indian tiger, and had tusks of extraordinary nature, virtual poignards with which the animal struck terrific downward blows, stabbing the enemy.

As numbers of extinct horses have been found in this trap, especially colts, it is easy to imagine that they may have been followed by the saber-toothed tiger. Here have been discovered the remains of an early bison, antelope, elk and deer, as well as a camel—animals which were chased into the deposit by the big tigers and wolves of the period; in fact one of the common victims of this trap, that is still set for the unwary, is the big wolf that doubtless ran about the trap and was entombed in an attempt to reach other victims. The most interesting remains found here are those of a sloth, which may have been larger than a bison. Its claws were found, and over the bones of a skeleton were discovered the pebble-like bones of the skin.

How long this trap has been in operation no one can say, but it doubtless dates back to early Cenozoic time, which is supposed to represent about 3,000,000 years, and complete excavations may result in the discovery of all the strange animals of the Quaternary period. The animals which wandered around this trap represented a strange diversity from those of to-day. They were giants, and among them were several elephants, a huge mastodon, several horses much larger than the present horse, a giant ox, bison, a monster tapir, bears many times larger than those still found in Texas or New Mexico, a species of wild hog, and the giant sloths—Megatherium, Mylodon and Megalonyx—ground sloths of vast size, the Megatherium being eighteen feet in length; an animal that must have weighed many tons and which easily pulled large trees to the ground.

The house is built in keeping with the contour of its site

The Country Seat of Charles S. Brown, Esq.

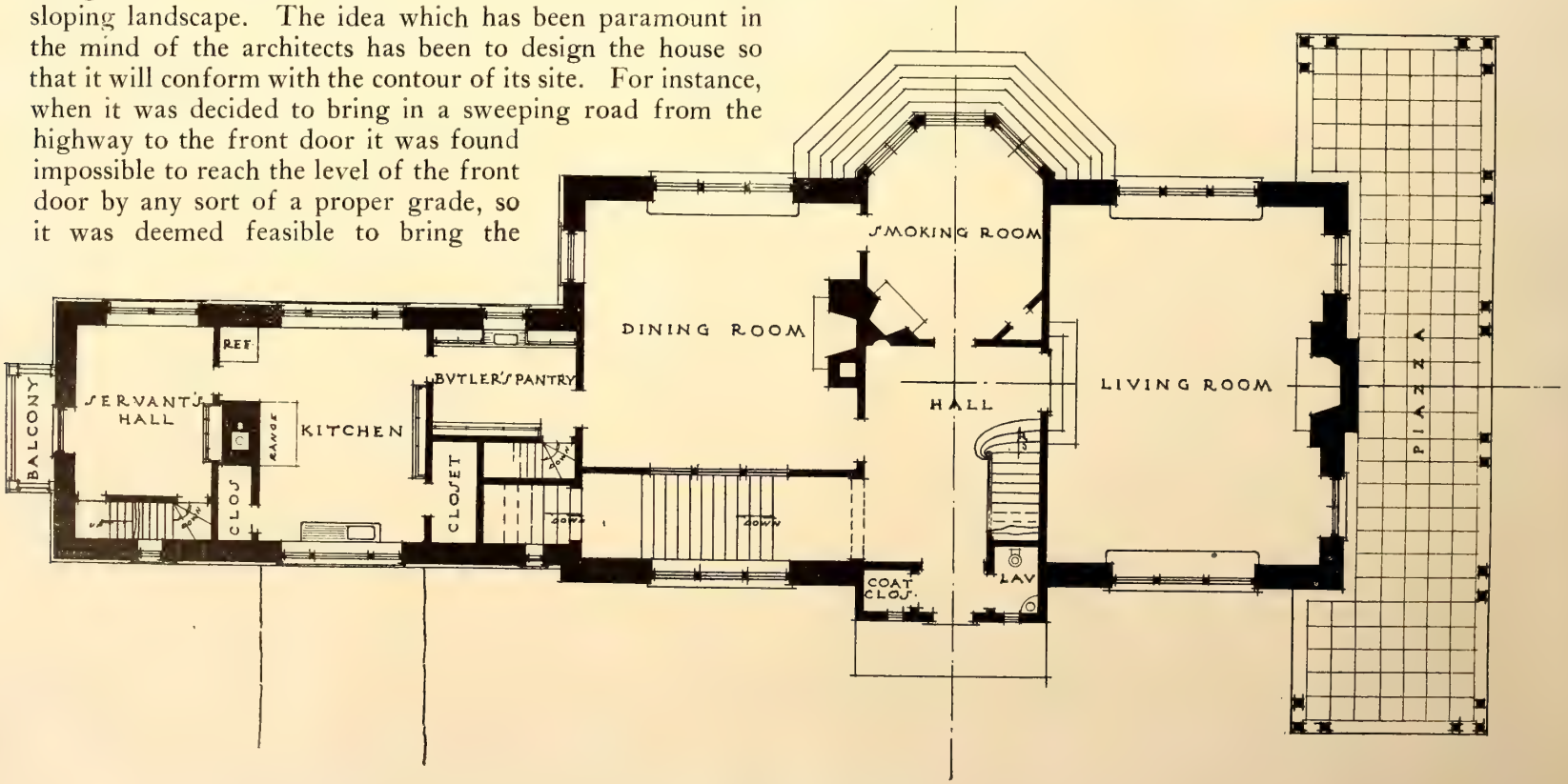
Mount Kisco, New York

By Charles Chauncey

ONE of the newer houses which have been built at Mt. Kisco, New York, is the one recently erected for Mr. Brown, from plans prepared by Albro and Lindeberg, architects, of New York City. The house is particularly interesting and it presents many unique features, for the whole place is happy and suggestive of an atmosphere which seems to be natural and in keeping with its surroundings, and at the same time meets the ideal as to the climatic and esthetic requirements of the American home.

Mr. Brown's house is a very excellent example of this particular style of house, and it is built with the effect of its rising out of the site which is a natural one of rocks and sloping landscape. The idea which has been paramount in the mind of the architects has been to design the house so that it will conform with the contour of its site. For instance, when it was decided to bring in a sweeping road from the highway to the front door it was found impossible to reach the level of the front door by any sort of a proper grade, so it was deemed feasible to bring the driveway in at the level of the basement and spring an archway over the porte-cochere, which would form a support to the service end of the house, and at the same time form an entrance and vestibule from which a broad flight of stairs rise to the level of the first floor.

The main walls of the house are built of rough fieldstone taken from the site and laid up in white mortar with wide mortar joints. The effect is most attractive for the reason that it has the appearance of the building really belonging to the site and that it was a part of it. The severity of the exterior color tone, if there be any, is softened by the half-timbered work with its soft brown stained half-timbers and the soft gray plaster work. The roof is the most unusual feature of the house, and the idea has been to use a device



The elongated form of the interior arrangement permits of good light and ventilation which is essentially good

The sweeping lines of the roof bring the house close to the ground

not with a view of imitating, but to produce the softening effect of a thatched roof. This roof is built of shingles that are cut and laid so as to show the lines such as those which are to be found in the thatched roof in its original as constructed of straw.

The interior throughout is trimmed with chestnut, and finished with a dark grayish brown stain. The main hall, which is a central one, contains a stairway of some beauty, rising up to a broad landing.

The drawing-room of large dimensions has a trim which, with its special treatment, brings out the grain of the wood in a very excellent manner. The walls are covered with wall covering in two shades of yellow with a large figure. Oriental rugs cover the polished floor and the draperies which are hung at the windows are of figured cretone of yellow and white. The fireplace is quite the feature of the room, for it is built of red Harvard brick with the butt ends protruding so as to form shadows when the bricks are laid.

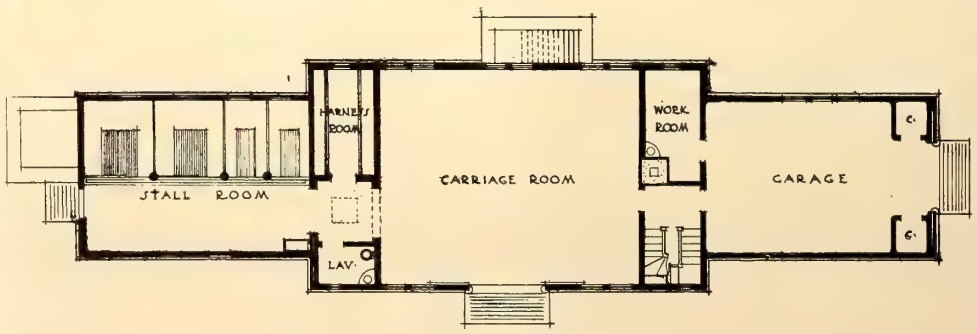
The drawing-room has a color scheme of two shades of yellow for the wall covering. The upholstery and curtains are of a similar tone

The dining-room has a batten wainscoting of chestnut with the walls above tinted a bluish green color

The dining-room is treated in a similar manner. It has a wainscoting of chestnut battens which are matched and fastened together with "Dutchmen"; this is very effective for it helps to match the woodwork. The walls above this wainscoting are tinted a bluish green tone. The fireplace, which is built with its facings and hearth of Harvard brick and surmounted with a massive wooden shelf, is a dignified feature of the room. The den is a study in red, and it is most artistic in its treatment and has an open fireplace and bookcases built in.

The service end of the house is provided with all the necessary fixtures to be found in a well regulated house. The second floor of the house is divided into five bedrooms, one dressing-room and three bathrooms.

The stable is of half-timber and stucco



A New Method of Housekeeping

By Rosika Schwimmer

WHEN the "home," as it now exists, is divested of the traditional glamour with which our fancy has clothed it, and regarded with a dispassionate and objectively seeing eye, its naked cheerlessness becomes appalling.

Yet housekeeping has been undergoing reform and improvement ever since the beginning of specialized industry. At first the family hearth was the center of all the industries which have since become specialized, and have been removed to factories. The removal of each class of work—soapmaking, brewing, baking, weaving, etc.—marked an advance in housekeeping. Now only four classes are left—laundry work (and this is fast going), housekeeping, cooking and the care and training of children.

The inefficiency and unhygienic character of the usual methods of housekeeping are obvious. Much of the dust dislodged by the broom settles down again, after poisoning the air for hours. Carpets, curtains and the upholstery and carved decorations of furniture are never free from dust.

No diligence in housekeeping can keep the house clean so long as it is heated with coal and lighted with gas or kerosene. The progress of applied science has given us electric light, steam heat, ventilating apparatus and pneumatic dust collectors, but these blessings are enjoyed only by the rich and can not be introduced into the ordinary small home.

The defects of home cooking are apparent to every physician. Almost every other art has become highly specialized, but in the preparation of food we cling tentatively to amateur methods.

The same is true of the care of children, so that the mother is expected to be, as Charlotte Perkins Gilman says, an embryo combination of cook, nurse, laundress, chambermaid, waitress, governess and housekeeper—Jack of all trades and master of none.

An attempt to reform this state of things has been made by Otto Fick, who established an apartment house of a novel type in Copenhagen in 1904. The apartments—twenty-five in number and containing from three to five rooms each—are rented unfurnished, so that each family can furnish its home in accordance with its own tastes and requirements. Each apartment has a kitchenette with a gas stove and a bathroom, supplied with hot water day and night. Electric light and central steam heating are included in the equipment, and each apartment is connected by telephone with the general kitchen, and also with the public telephone system. Meals are prepared in the general kitchen and sent up to each apartment by means of an electric dumb-waiter.

Privacy is as complete as in an apartment house of the usual type. The only commercial feature is the centralization and specialization of every task of housekeeping—cleaning, ventilation, lighting, heating and preparation of food—so that the tenants are entirely relieved of the burdens of marketing, making fires, cooking, sewing, dishwashing, etc.

Luncheon is served in the apartments from ten to twelve, and neatly packed luncheons are provided for school children and others who desire them. Dinner is served in the afternoon, according to Copenhagen custom, and tea until ten in the evening.

The menu is so extensive and varied that monotony can be easily avoided, and the general kitchen has a list of the preferences, and particularly of the aversions, of every family, in which it is gravely set down that one family is never to be served with mushrooms, a second with cabbage, a third with rice pudding, etc. Individual, as well as family, preferences are respected.

Dishes, plates, cups, etc., of the so-called "unbreakable" ware are furnished by the management, but each family may provide its own table ware and have it washed in the general kitchen, without, however, any guarantee against breakage. Laundry work, extra service and meals for occasional guests are furnished at low rates.

Cheapness, indeed, is the guiding principle, and cheapness combined with excellence is attainable only with the aid of centralized housekeeping. The kitchens and other service rooms in the basement are equipped with the most approved apparatus, and the food and other supplies are abundant and of the best quality.

The annual charges for rent, heat, light, baths, food and service, including pneumatic "sweeping," window cleaning and even shoe polishing, are about

For 2 adults occupying a 3 room apartment . .	$420.00
For 2 adults occupying a 4 room apartment . .	550.00
For 3 adults occupying a 4 room apartment . .	735.00
For 4 adults occupying a 4 room apartment . .	855.00
For 2 adults occupying a 5 room apartment . .	655.00
For 3 adults occupying a 5 room apartment . .	795.00
For 4 adults occupying a 5 room apartment . .	930.00

Small additional charges are made for children and servants.

This first centralized apartment house has proved so successful that others are projected. Fick also purposes to erect a house with large general playrooms for school children and for small children. Nurses will also be provided so that mothers who have occupations away from home will be able to leave their little ones in safe keeping.

Another event of the Fick system is that it settles the servant question to the advantage of both employer and employed. Much of the work of the centralized household is performed by machines and the rest is skilled labor with definite hours of work. When housekeeping is thus raised to the rank of a specialized industry it will attract workers of a more intelligent class who now very justifiably refuse to work sixteen or eighteen hours a day.

There are other advantages, both economic and social. Under the present system a house is unattainable by an unmarried man or woman, yet the cost and burden of housekeeping act as preventives of marriage. The system is very elastic and allows of apartments of two rooms, or even one room, and of general dining-rooms, reading-rooms, etc.

Finally, the lifting of the burden of housework makes possible a reform in child culture. At present only the children of the wealthiest classes enjoy anything like proper care and training. All other children are sacrificed to the foolish tradition which regards the mother as the natural teacher and the home as the best school. Mother love is an instinct, and it implies no pedagogic ability, as daily experience proves. Education is a function of society, and it should be performed by persons of fitting character and ability, who have been prepared for the task by study, not by procreation. The fully developed co-operative house will have "crêches," playrooms and open-air playgrounds and gymnasiums on the roof, presided over by skilled nurses and teachers.

Separating bad seeds and impurities

The New Seed Testing Station in Paris

By Jacques Boyer

THE Paris Seed Testing Station, which was first established in a small laboratory of the Conservatoire des Arts et Métiers and moved a little later to equally cramped quarters in the Agronomic Institute, has for the last few months enjoyed an independence well earned by its useful work. Since its installation in the Rue Cervantes, moreover, the station has acquired a special importance, for it has been charged with the task of testing grain and seeds, and analyzing all specimens of concentrated fodder, including oil cake, bran cake and provender (a compound mixture of grain and chopped fodder), which has been seized by inspectors throughout French territory under the adulteration law of 1905.

Although the preponderating influence of the seed on the crop is universally admitted, very little has been done in the way of testing the purity and quality of seeds. In France there are thirty agricultural stations for testing fertilizers, but only two for testing seeds. In the new establishment the plant is studied from the economic rather than the scientific point of view. The seeds are subjected to a series of tests for the purpose of determining the species, variety, purity, germinating power, freedom from dodder in the case of clover, lucerne, flax and grass seeds, freedom from pumpernel in the case of sainfoin, etc.

In the first place, the species are determined by specialists from the appearance of the seeds to the naked eye and by the examination of thin sections with the microscope. The variety, as a rule, can be determined only by a culture test. The place of origin of the specimens is also noted, for few plants thrive in a climate very different from that of their native land. For example, when winter retch seed raised in the south of France is sown in the northern districts the young plants are almost always killed by the cold of winter, and American clovers, often sold as French clovers, being natives of hot and dry regions, are frequently killed by severe winters or by fungous diseases. Dodder seed is detected in clover and lucerne seed by a process of sifting. About ten ounces of the suspected seed are passed through hand sieves, or through a machine containing four superposed sieves mounted on a can, to which an oscillating motion is given by a hot-air or water moter. The meshes of the four sieves, beginning with the uppermost, measure respectively eight, six, five and four hundredths of an inch. The first sieve retains the coarse impurities, the second the clover or lucerne seed, the third and fourth the large and small dodder seed, while the fine impurities fall through to the bottom of the apparatus.

The degree of impurity is given by the percentage of the original mass that collects on the third and fourth sieves and the bottom. If the seed contains no dodder and has not been sifted, it is examined by women who, with the aid of horn spatulas and magnifying glasses, separate the good seed from the bad seed and the impurities. The examiners also separate the impurities into distinct heaps of vegetable and animal parasites, weed seeds and other inert or injurious substances. If it is found impossible to detect by this method the seeds which contain no embryos, or are otherwise incapable of germination, the doubtful seeds are examined by transmitted light in a dark chamber constructed for this purpose. The percentage of good seed and of impuri-

Forcing chambers for the germination of seeds

ties of various sorts are obtained by weighing with delicate balances.

For the germination test three hundred or more seeds are sown, by hundreds, in seed beds which are then placed in a forcing chamber. For most species the seed beds are merely sheets of filter paper, folded once and kept moist.

Beet seeds are usually sown in platters filled with fine sand and watered once, at the beginning of the experiment. One hundred small holes are made in the sand of each platter by pressing on it a wooden disk studded with one hundred wire nails, and the seed is dropped into each hole. Before the platters are placed in the forcing chambers they are covered with panes of glass or sheets of paper in order to reduce evaporation to a minimum. The forcing chambers, which were designed by Schribaux, the director of the station, are of several types. All, however, resemble cupboards closed by glass doors, are heated with gas, and provided with separate temperature regulators. Each chamber contains either a dozen trays which slide in grooves and carry the seed filter papers, or a dozen frames made of rods, on which the beet seed platters are placed. A clock, consisting of a cylinder, which makes one revolution every twenty-four hours, automatically opens and shuts the gas cocks at certain hours, independently of their control by the regulators. An exact record of the temperature is made by a registering thermometer. It has been found necessary to keep the temperature at 68 degrees Fahrenheit during eighteen hours, and at 82½ degrees Fahrenheit during the succeeding six hours, in order to imitate successfully the difference between night and day temperatures in the open air. If this precaution is not taken, the seeds of certain species which must be sown on the surface because of their smallness, and which consequently are subjected to sudden diurnal changes of temperature, will sprout in an abnormal manner in the forcing chamber, although they may be in perfect condition.

Germinating chamber for beet seed

The time occupied in the process of germination varies in different species, as is strikingly illustrated by the group of seedlings of various sorts shown in one of the photographs. Perfect germination is the first requisite of good seeds, but they must also produce vigorous plants. Experience has proved that the vigor of the seedling depends, in the first place, on the weight of the individual seed, and, in the second place, on the course of the germinative process, which should be accomplished rapidly and in a normal manner. Consequently the bulletins of the testing station give the weight of one thousand good seeds of the specimen examined and their "germinative power," represented by the number of sprouts that have appeared within a certain number of days. The "purity" is the ratio between the number of good seeds and the whole number of seeds, and the "cultural value" is the product of the purity multiplied by the germinative power. The cultural value, in short, expresses the percentage of seeds freed from impurities that germinate within a reasonable time. All this information is entered upon bulletins which are sent to the officials charged with the suppression of frauds, or to the private persons who have submitted the seeds for examination.

The sale of adulterated and worthless seed has hitherto been conducted openly in France. The station is also carrying on interesting experiments in other lines, seeking among new varieties of plants those which are most worthy of cultivation and best adapted to the needs of the farmer.

Preparing seed beds in platters and examining seedlings

A collection of seedlings, at various intervals after sowing

1—Rye, seven days 2—Clover, eight days 3—Ray grass, eight days
4—Maise, five days 5—Beets, eight days

CORRESPONDENCE

The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

By Alice M. Kellogg

Author of "Home Furnishing: Practical and Artistic"

A TABLE FOR A LIBRARY

"IS THERE any kind of a table that I could use in my library that would look a little more unusual and interesting than the ordinary oblong table? I have a writing desk against the wall, so I do not need a table with drawers. I notice in your correspondence department that you speak of a 'gate-leg' table. What does this look like? Is it suitable for my room?

"C. W., Ohio."

There are various styles of the gate-leg table, which dates back to the middle of the seventeenth century. The one illustrated has a simply turned leg with a leaf on either side that drops down when the

A gate-leg table

leg is turned back. It was a table of this kind that was made famous by having the Declaration of Independence signed on it. In England, where the table originated, it is often used for a breakfast table. It is available for a good many purposes and places as it can be adjusted to three different sizes.

COLOR COMBINATION FOR A WESTERN HOME

An Oregon homemaker, H. R. H., writes: "I am building a house that is Colonial in design. I am particularly anxious to have the interior colors on the first floor harmonious. The dining-room has a low wainscot, no plate rail, a long plant window on the south side and mahogany furniture of Chippendale pattern. What finish would you have on the woodwork? What wall covering? Also, what kind of curtains and rug? I am undecided, too, about the wall covering for the hall. I had thought of red, but I really prefer to use browns and blues on the first floor. I do not know how to combine these colors. The living-room is to have mahogany

(*Continued on Page x*)

Garden Work About the Home

By Charles Downing Lay

PLANTING A CEMETERY LOT

THE regulations of cemetery associations vary so greatly that it is hard to advise A. D. P. about the planting of the lot mentioned.

Some cemeteries restrict lot owners to one stone, of a design to be approved by the association, and do not allow any curbs, railings or fences, but mark the corners of the lot with granite blocks at their own expense.

In one cemetery that I know of, planting of any kind is forbidden, as are mounds over the graves, and the lots are to be cared for by the association forever.

Other large cemeteries, like Greenwood, make arrangements for perpetual care of the lots, but as the payment for perpetual care is not required, one lot may be kept in beautiful order while those on each side may have no care whatever, spoiling the good effect of the neat lot.

One of the nicest lots I have seen has plain granite posts with a chain hung between to mark the lot. There is one simple monument and the graves are marked by headstones.

Climbing roses grow on the posts and are trained along the chains. One grave is planted with candytuft, *Iberis tenoreana,* a charming evergreen perennial herb which has an abundance of white flowers in the spring.

Another grave is planted with English Ivy, a third has the beautiful Daphne (*D. cneorum*), which bears delicate sweet scented pink flowers in May and September.

In one corner of the lot is a holly tree twelve feet high, and not far away there are several fine white oaks.

Nothing nicer or more suitable could be imagined, and the lot always looks well. Even in the dead of winter the graves are green and cheerful and no planting could be more permanent or easier to care for.

Geraniums and such soft annuals are always a mistake, because the first frost destroys them and the lot looks like distress until the planting can be done over again in the spring.

A lot which I have just planted is unusual, but rather pleasing. Along the road, which goes downhill slightly from the corner, there is a marble retaining wall, built so that the lot could be graded level, and so that a sloping bank covered with grass would be unnecessary. The wall is, at its highest point, not more than two and a half feet high. At the bottom are planted ivy and euonymus (*E. radicans*), at the top the evergreen andromeda (*Pieris floribunda*), which is now low, but will grow to three feet, making a hedge which will be neat and orderly, but not rigid. It will not have to be clipped.

There is an easy flight of steps from the road to the lot, and at the top and bottom the steps end in a wide platform. On either side of the steps there is a Japanese yew tree.

The back of the lot is thickly planted with rhododendrons, which soften the sharp corners and hide all but the tops of the monuments on the adjoining lots. These rhododendrons are tall at the back (specimens of *R. maximum* six feet high), but in front where the named hybrids are planted they are low, their branches touching the grass.

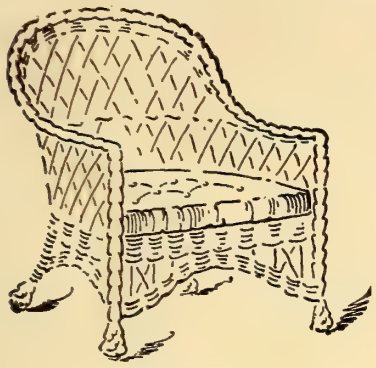
They make a good background and are charming when in bloom. Two or three dogwoods (*C. florida*) are planted among them and add not a little to the effect throughout the year.

There are several good oak trees on the lot and a fair hemlock, besides two old dogwoods.

At the narrow end of the lot there is an old boulder, cracked apart, and in this crack we have put soil and planted white moss

(*Continued on Page xii*)

JOSEPH P. McHUGH & COMPANY
OF NEW YORK: ESTABLISHED 1878:
Will ship on receipt of $5.00
(Money Order or N. Y. Draft)



THE BAR HARBOR CHAIR,
(Natural Willow, Floss Cushion)
Will mail for 25c. in Stamps
(to be allowed on first purchase)
THE PORTFOLIO OF 1000 SKETCHES,
illustrating Quaint and Unusual
Willow, Mission and Upholstered
FURNITURE OF ORIGINAL DESIGN.
9 W. 42d St., Opposite Library.
(SIGN OF THE "POPULAR SHOP.")

DESIGN No. 4301.—This handsome Cruiser has been perfected by us, and will be offered as a Stock Design, to be built in number, at reduced cost and selling price. Length 43 ft ; beam 10 ft. Sleeps five. Wholesome, complete, comfortable and safe. Particulars on request. Other craft built on order.

THE MATTHEWS BOATBUILDING CO.,
Port Clinton, Ohio.

Artistic Practical Houses, 1908

A NEW book for 1908 has been prepared, showing the latest designs of houses of modern cost. This volume contains practical and skilful arrangements of floor plans, and shows artistic exteriors equal to those of the most expensive work in the suburban architecture of America. If you want a house costing from $5,000 to $10,000, *complete and convenient* and yet unusual and the *opposite from the commonplace*, you will be interested in this new book. Price, $2.00, by express prepaid.

MUNN & CO., 361 Broadway, New York

Bound Volumes of American Homes and Gardens

Volume for 1905 $3.50
Volume for 1906 $5.00
Volume for 1907 $5.00

MUNN & CO., Publishers 361 Broadway, New York

American Homes and Gardens *and* Scientific American will be sent to one address for **$5.00**
Regular Price, $6.00

GRAPERIES—AQUATIC HOUSES

Grapes from May 'till Christmas is what one of our graperies will make possible. Grapes in bunches weighing 8 to 10 pounds.

Aquatic pools with their surroundings of luxurious growths are always interesting—water plants hold a sort of mystery, wonderment that makes a greenhouse hardly complete without one compartment for a pool.

But we make every conceivable kind of house for growing anything under glass.

Send for our circular showing some of the numerous houses we have erected.

HITCHINGS & COMPANY

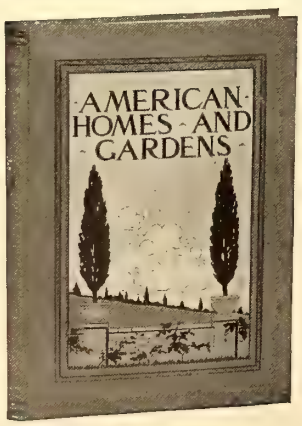
1170 BROADWAY, NEW YORK CITY

Bound Volumes of American Homes & Gardens 1908

494 Pages, 1,100 Illustrations. Price, $5.00

AMERICAN HOMES & GARDENS covers a wide scope; it deals with house building from the design and construction of modest cottages on tiny lots to the building of mansions on large estates. All degrees of gardening, from laying out a landscape to the planting of a window-box, are dealt with. Practical questions of water supply, of sanitation, or of the arrangement of the kitchen receive equal treatment with draping of windows or the arrangement of old china.

AMERICAN HOMES & GARDENS is beautifully printed. The year's volume contains more than a thousand engravings, as full of detail and finish as actual photographs. They depict some of the old and historic mansions of America, and the most beautiful of gardens or of natural scenery. The following list of a few of the principal practical articles which appeared in *American Homes and Gardens* during 1908 will show the wide choice of subjects:



Notable American Homes (12 descriptive articles); The Rose as a Summer Bedder; Private Automobile Garages; Leaded Glass Windows; Etching on Copper and Brass; Problems in House Furnishing (12 papers); Garden Work about the Home (12 papers); Indoor Bulb Culture; Farming Experiment of a Woman; Rugs from the Scrap Bag; Water Parks; Old Time Lights; Latches and Knockers; The Sun Room; Japanese Gardens in America; Sun Dials; Heating and Lighting with Alcohol; Spring Houses Old and New; Planning a Country Home; The House Roof and its Garden; The Plant and the Season; Garden Streams and Bridges; Stencil Work in Home Decoration; Bungalows (12 articles); Scientific Poultry Breeding.

A limited number of volumes for 1907 are available. 480 pages. 1,050 illustrations. Price $5.00. Volume for 1906, $5.00. Volume for 1905, $3.50.

MUNN & CO., Publishers, 361 Broadway, New York

PROBLEMS IN HOME FURNISHING

(*Continued from page 80*)

woodwork, and the fireplace design is still undecided. Would you say tiling and a wooden mantel, or brick to the ceiling? I want the appearance and fittings of this room to be serviceable and artistic. The room is eighteen feet by twenty-eight."

As the hall, living-room and dining-room open into each other, it is really imperative to plan the wall colors as a complete scheme, instead of trying to make each room independently attractive. Fortunately, this point is recognized in time to prevent mistakes. For the hall a deep-toned buff paper printed in stripes three inches wide would give an interior effect of sunniness. The stairs may be carpeted with a brown-and-dark-blue carpet, and rugs made of the same material used for the hallways of the first and second floors. As there are probably leaded glass side lights on either side of the door, a fine net in ecru color may be shirred across them. The woodwork of the hall and dining-room may be painted a cream-white, rubbed to an egg-shell finish. The space above the low wainscot (in the dining-room) may be fitted with a woven tapestry in panels. Or, large panels of wall paper, each depicting a complete scene, may be pasted against the wall. If these ideas prove too expensive to carry out, an ordinary tapestry paper in foliage pattern, in which some buff color is introduced, may be an alternative. "The Forests of Fontainebleau" is a good selection. Across the window glass an imitation filet net by the yard, finished with a narrow lace edge, may be hung, with over-curtains of brown silk. The latter may be hung in straight lengths, one at each side of the window. A suitable rug for this room would be a French Wilton in tones of old mahogany, brown and dull blue.

As the living-room departs from the Colonial traditions in its wood finish the fireplace may be carried out on modern lines, using square, Grueby tiles, across which a picture is painted. The supports of the mantel and its framework should accord with the architectural lines of the room. Selecting these tiles with a mixture of blue, green and buff will introduce a two-toned buff paper on the walls, and also suggest rugs in which blues and greens appear. If there is a beamed ceiling, the open spaces may be filled with a gold Japanese leather paper in burlap effect. The new English muslin in ecru color, costing about sixty cents a yard, will suit the windows of this room. Over-curtains for the winter may be of golden-brown wool damask, trimmed with antique gold braid. The furniture coverings may be of green or blue wool tapestries in small, set figures. If there is a davenport sofa, its covering may be a blue velour woven with a gold thread.

For information about buying pictures and picture frames this correspondent is referred to the November and August (1908) Correspondence Department of this magazine.

A FLOOR PROBLEM

E. S. J., of New Jersey, asks about the best way to cover the floor of an irregular-shaped room. "The fireplace," she writes, "occupies one corner and a large corner cabinet is opposite. In the front is a row of windows almost like a bay. I prefer to use rugs throughout my entire house, as it does away with the annual upsetting of cleaning house. The domestic rugs in the regular widths do not fit this room, and the Oriental rugs in large sizes that are suitable are too expensive. What do you think of my distributing small Oriental rugs in this room?"

A room shaped unevenly really looks better covered with a small-patterned carpet laid

Concrete Country Residences

The above title has been given to a beautiful book of 168 pages, published by the Atlas Portland Cement Company, and sent Free to prospective builders. It contains photographs and floor plans of over 150 concrete houses, ranging in price from $2,000 to $200,000.

Concrete is now recognized as the most desirable building material for country residences. Its adaptability to nearly every form of architectural treatment is being demonstrated daily to the satisfaction of builders and owners everywhere. When you build, remember that

ATLAS PORTLAND CEMENT

4,500,000 barrels of Atlas were ordered by the U. S. Government for the Panama Canal.

Daily productive capacity over 40,000 barrels

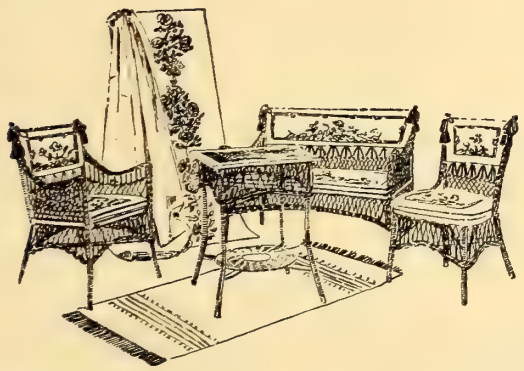
Makes the Best Concrete

THE ATLAS PORTLAND CEMENT COMPANY
Department 10, 30 Broad Street, New York
SEND FOR THIS BOOK.
It is free, but the postage is 25 cents

NONE JUST AS GOOD

NONE JUST AS GOOD

FLINT'S FINE FURNITURE



Summer Furnishings of Reed, Rattan and Willow

No other furniture so nearly approaches the acme of ease and cool comfort in the Summer home as Reed, Rattan and Willow Furniture.

We have an endless variety in all the colors as also in the natural color, or we will make any special color to order without extra charge.

Every piece is hand-made—some from our own designs, others fron the best European patterns.

The collection includes chairs, tables, settees, beach chairs and a variety of odd pieces of exceptional beauty.

We will, upon request, send competent artists to take entire charge of any decorative problem and submit sketches and estimates.

GEO. C. FLINT CO.

43-47 WEST 23rd ST. 24-28 WEST 24th ST.

The World's Choicest Nursery Products

It is advisable to order now to get your choice of our World's Choicest Nursery Products. Never before have we had a selection as handsome as we offer for planting this season. Intending purchasers will do well to visit our Nursery to inspect our products. If you cannot inspect our products we shall be pleased to give prices on your list of wants for Spring planting.

ROSES.—We have many thousands of two-year-old plants ready for shipment, consisting of all the most suitable for the American climate.

EVERGREENS AND CONIFERS.—Many acres of our Nursery are planted with the most attractive specimens ever produced in this country. Our collection has been admired by visitors from all parts of the world.

PINES.—We grow many thousands in all the most useful and striking kinds. No grounds are complete without a proper number of them, as they are healthful, and add attractiveness to the landscape.

RHODODENDRONS.—Are among our many specialties. Everybody intending to plant should certainly see our stock. We can give prices on large or small quantities in all the hardiest and most attractive varieties.

BOXWOOD.—Our stock is probably unsurpassed, as we have thousands in all sizes suitable for boxwood gardens, flowering shrubs that will grow everywhere, and adapted for every style of planting.

TREES.—The favorable condition of our climate and soil help to make our trees hardy, vigorous and free from disease. One hundred thousand can be seen growing in our Nursery, grown for every kind of planting.

HEDGE PLANTS.—We grow thousands for any kind of hedge desired.

VINES AND CLIMBERS.—We have large quantities for every style of covering.

BAY TREES.—The largest collection in this country can now be seen in our storehouses in all sizes.

OLD FASHIONED FLOWERS.—For old fashioned gardens, beds and borders. Many acres in our Nursery are planted with the largest and most complete collection in this country Thousands of people visit our Nursery annually to see them when in bloom.

FRUITS.—We can supply from our collection of trained and ordinary fruits to make a complete fruit garden. In addition we have a fine selection of all kinds of small fruits, strawberries, etc.

ENGLISH POT-GROWN GRAPE VINES —We have an especially fine lot of these for early Spring delivery. Ask for list with prices.

TUBS.—We make them in all sizes and shapes for plants and trees.

Catalogue No. 12 mailed on request VISIT NURSERY

BOBBINK & ATKINS

Nurserymen and Florists Rutherford, N. J.

The Best of Morning Tonics
The Most Delicious of All Breakfast Fruits

Atwood Grape Fruit

For the appetite that lags at breakfast-time there is no more pleasant or more effective stimulant possible than a cool, refreshing ATWOOD Grape Fruit.

ATWOOD Grape Fruit is the best to be had in grape fruit. It is the solid, thin-skinned, delectable kind, the most abundant in its juices. It provides just what the system needs in cleansing, corrective qualities to prepare it for the full enjoyment of the morning meal.

Look for the ATWOOD Trade-Mark on the wrappers. Insist on it, as it is your assurance of the perfect product.

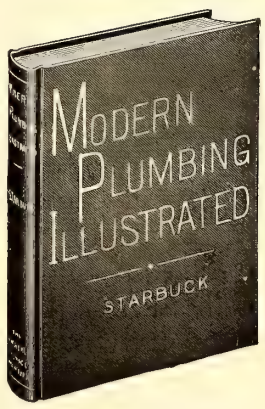
The Atwood Company Manavista Fla. TRADE MARK

ATWOOD Grape Fruit is known everywhere as the finest grape fruit product grown. The ATWOOD Grove in Manavista, Fla., contains over 250 acres devoted exclusively to the cultivation of grape fruit on the highest scientific principles.

To serve, cut in cross sections, remove the core, and serve with or without sugar. Grape Fruit is better when served without ice. ATWOOD Grape Fruit makes the most delicious salads. Taken at night on retiring is better than any drug. Buy it by the box—it will keep for weeks.

THE ATWOOD COMPANY
KIMBALL C. ATWOOD, Pres. and Treas. — 290 BROADWAY, NEW YORK

Modern Plumbing Illustrated



By R. M. STARBUCK

400 (10¼ x 7½) PAGES

55 FULL PAGES OF ENGRAVINGS

PRICE, $4.00

¶ A comprehensive and up-to-date work illustrating and describing the Drainage and Ventilation of Dwellings, Apartments and Public Buildings, etc. The very latest and most approved methods in all branches of Sanitary Installation are given.

¶ Many of the subjects treated in the text and illustrated follow in the next column.

MUNN & COMPANY, *Publishers*
SCIENTIFIC AMERICAN OFFICE, 363 BROADWAY, NEW YORK

SOME OF THE SUBJECTS TREATED

Connections, sizes and all working data for all Plumbing Fixtures and Groups of Fixtures
Traps — Venting
Connecting and Supporting of Soil Pipe
House Trap and Fresh-Air Inlet
Floor and Yard Drains, etc.
Rain Leaders
Sub-soil Drainage
Floor Connections
Roof Connections
Local Venting
Bath Room Connections [etc.
Automatic Flushing for Factories, School Houses,
Use of Flushing Valves
Modern Fixtures for Public Toilet Rooms
Durham System
Plumbing Construction without use of Lead
Automatic Sewage Lift — Sump Tank
Disposal of Sewage of Underground Floors of High Buildings
Country Plumbing
Cesspools
The Electrolysis of Underground Pipes
Septic Tanks and Sewage Siphons
Pneumatic Water Supply, Rams, etc.
Examples of Poor Practice
Roughing — Testing
Continuous Venting for all classes of Work
Circuit and Loop Venting
Use of Special Waste and Vent Fittings
Cellar Work
House Drain — House Sewer — Sewer Connections
Plumbing for Cottage House
Plumbing for Residence
Plumbing for Two-Flat House
Plumbing for Apartment Houses
Plumbing for Office Building
Plumbing for Public Toilet Rooms
Plumbing for Bath Establishment
Plumbing for Engine Houses
Plumbing for Stables
Plumbing for Factories
Plumbing for School Houses, etc. [by Electricity
Thawing of Underground Mains and Service Pipes

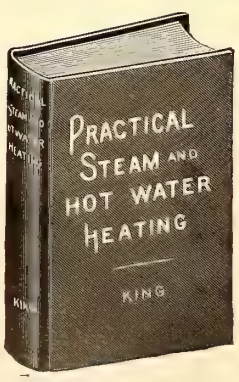
JUST PUBLISHED — JUST PUBLISHED

Practical Steam and Hot Water Heating and Ventilation

By ALFRED G. KING

402 Pages. Containing 304 Illustrations

Price $3.00



An original and exhaustive treatise, prepared for the use of all engaged in the business of Steam, Hot Water Heating and Ventilation

THE standard and latest book published. Tells how to get heating contracts, how to install heating and ventilating apparatus. Describes all of the principal systems of steam, hot water, vacuum, vapor and vacuum-vapor heating, together with the new accellerated systems of hot water circulation, including chapters on up-to-date methods of ventilation; fan or blower system of heating and ventilation; rules and data for estimating radiation and cost, and such other tables and information as make it an indispensable work for heating contractors, journeymen steam fitters, steam fitters' apprentices, architects and builders.

This work represents the best practice of the present day and is exhaustive in text, diagrams and illustrations.

CONTAINING CHAPTERS ON I. Introduction. II. Heat. III. Evolution of Artificial Heating Apparatus. IV. Boiler Surface and Settings. V. The Chimney Flue. VI. Pipe and Fittings. VII. Valves, Various Kinds. VIII. Forms of Radiating Surfaces. IX. Locating of Radiating Surfaces. X. Estimating Radiation. XI. Steam-Heating Apparatus. XII. Exhaust-Steam Heating. XIII. Hot-Water Heating. XIV. Pressure Systems of Hot-Water Work. XV. Hot-Water Appliances. XVI. Greenhouse Heating. XVII. Vacuum Vapor and Vacuum Exhaust Heating. XVIII. Miscellaneous Heating. XIX. Radiator and Pipe Connections. XX. Ventilation. XXI. Mechanical Ventilation and Hot-Blast Heating. XXII. Steam Appliances XXIII. District Heating. XXIV. Pipe and Boiler Covering. XXV. Temperature Regulation and Heat Control. XXVI. Business Methods. XXVII. Miscellaneous. XXVIII. Rules, Tables and Useful Information.

Valuable Data and Tables Used for Estimating, Installing and Testing of Steam and Hot-Water and Ventilating Apparatus are Given

MUNN & COMPANY, PUBLISHERS, 361 BROADWAY, NEW YORK CITY

without a border. As a rug, however, is preferred to a carpet, the second choice would be to make a rug of carpet, shaping it to fit the spaces and finishing it with a narrow border. An even margin of a foot and a half could, by this method, be left around the edges of the floor. Some of the Wilton carpets are excellent for this purpose. To keep a carpet rug from slipping a cheesecloth pad to lay under the rug is a help. This pad is inexpensive and may be made any size and shape.

GRAINED OAK WOODWORK

"Do you think my room very jarring with the woodwork a combination of imitation oak and white paint?" asks a Pennsylvania reader, H. A. C. "The walls are painted in gray, the ceiling an ivory white. The window casings and door frames are white, and the door panels below are grained oak. A friend who is visiting me says this mixture on the woodwork is in bad taste, and urges me to write to your department to settle the matter."

A generation ago, before much attention was paid in this country to artistic principles in house decoration, the imitation oak was popular, and was often combined with white paint. Now it is considered in better taste to have all of the woodwork treated alike with the exception, perhaps, of the doors. If the gray wall is to remain, the general appearance of the room would be improved by adding chintz or taffeta curtains at the windows.

A UNIQUE HALL LIGHT

Some kind of light for a hall that will be interesting and unusual is inquired for by a Brooklyn correspondent, G. E.

If electricity is the medium for lighting, there is quite a variety to draw from for a hall light. One of the quaintest of these is a bronze Japanese lantern, round in shape, with a dragon pierced through the metal. By lining the lantern with colored paper it becomes a part of the color decoration of the hall at night. With gas, it is more difficult to carry out the wishes of this correspondent, and a conventional shape will probably have to be used.

GARDEN WORK ABOUT THE HOME

(*Continued from page 80*)

pink (*Phlox subulata*), a rose grows over it from the back and in front there are two good Japanese andromedas, evergreen and similar to that used for the hedge.

Laurel (*Kalmia latifolia*) has been used also and its pink flowers blend prettily with the Dorothy Perkins Rose on the boulder.

Hall's magnolia should be there for the sake of its white stars in early spring and its foliage, which harmonizes with the rhododendrons.

The graves have simple headstones of marble with a marble curb four inches high surrounding the grave itself. In the inclosures so made are planted *Daphne, Iberis, Phlox subulata* and ivy, one kind in each grave. Near the headstones there is a small group of Poet's narcissus.

All the plants used are long lived, but grow slowly and will scarcely ever outgrow the limits of the lot. With ordinary care they should outlive the oldest member of the generation now beginning. The necessary minimum care will, of course, include the removal of the rhododendron maximum, and the shifting back of the named varieties, as they grow taller and need more room.

The thing to avoid in planting a cemetery lot is temporary planting, like the annuals or other tender plants which need constant renewal or the quick growing things which will soon make an ugly wilderness of any lot. For

this reason the retinosporas and most other conifers should not be used. They are charming when young and small, but ten years of neglect will make a great change, leaving them perhaps tall, scraggy and unlovely. The red cedar possibly is the only evergreen tree which should be used except the yew.

The small things like *Juniperus communis* I should be afraid of, though I once saw, in a cemetery in Concord, a juniper growing above a vault in the hillside and bending down in the most picturesque way—I imagined it was adventitious!

It is nice to think of a rose bush growing over one's grave, but I should not like to have mine marked by a leggy golden *Arbor vitae*.

A GARDEN OF SWEET ODORS

"Cephalanthus."—Your idea for a garden of sweet odors can easily be accomplished. It would be better to make it a wild garden, rather than a formal one, as the plants with fragrant leaves seldom have showy blossoms, and they vary so greatly in size and in their requirements that they would not be easy to grow together in an ordinary garden. A wild garden, too, will give you room for shrubs and large trees.

The rocky ledge which you describe, rising from the still waters of the brook as it flows through the meadow, will be an excellent place. There you can plant the red cedar whose richest fragrance is buried in its crimson heart; the gum tree whose viscid young leaves, when gently brushed, give an aroma like incense, and the spice bush which gives the most delightful odor of our woods.

All the odors of the woods are a keen delight to some people, even the skunk cabbage has charm in early spring, but perhaps you will not care to plant trees for the sake of their odors, when they are so delicate and so little like perfumes as are those of the wild cherry, birch, hickory, pines, spruces, balsams, etc.

Scented leaves when green must not be crushed, which brings out a raw vegetable odor, but gently pressed and warmed in the hand. Nor should the mint which is used in drinks be bruised, but simply placed on top of the cracked ice.

Spikenard is a handsome plant which grows well in light shade. Its leaves have a peculiar aroma, not unpleasant when one has tried it a few times.

Southernwood, with feathery gray foliage, does well in dry places, and should be near its relative, wormwood, which has a similar fragrance and bitter leaves that are pleasant to taste.

Mints should be grown in variety from the humble catnip to the peppermint and pennyroyal. They all keep their fragrance when dried and may be enjoyed in winter as well as in summer. Horsemint is tall and usually stands well above the snows and is, therefore, associated in my mind with walks in winter fields.

Lavender, rosemary, bergamot, horehound, and basil are real perfumes, the latter the sweetest of them all, in fact and in imagination; while fennel, tansy, feverfew and yarrow are just odors, delightfully pungent and wild, but not ravishing.

Thyme and sage being condiments are half perfumes, half odors, while tarragon is delightful enough to be either.

The sweetflag will grow in any low ground or at the edge of a brook. Both leaves and root have a sweet fragrance. The root may be candied and eaten, but it is too hot for most people.

There is a thyme which has the same flavor as the "lemon verbena," with the additional virtue of being perfectly hardy. It is a good rock plant.

FIFTY FOUR YEARS OF QUALITY
1855 1909
WOLFF'S PLUMBING GOODS

"Guaranteed"

Architects are cautioned that there are many guarantee labels being used on porcelain enameled iron plumbing fixtures, and that in accepting a ***guaranteed*** tub, it will be the part of caution to identify the firm issuing the guarantee label as to financial responsibility and record of having made good, in a broad way, all that a guarantee label both states and implies.

The WOLFF GUARANTEE is fifty-three years old, and during that time has made a reputation for itself unique in the relation of a manufacturer to his product.

The cost of tearing out and replacing imperfect plumbing fixtures is so great that a guarantee label must have a broader meaning on plumbing equipment than on any other branch of building equipment. The guarantee label that is not backed by reputation and undoubted financial responsibility is indeed an empty statement.

L. WOLFF MANUFACTURING CO.

Manufacturers of

PLUMBING GOODS EXCLUSIVELY

The only Complete Line made by any one firm

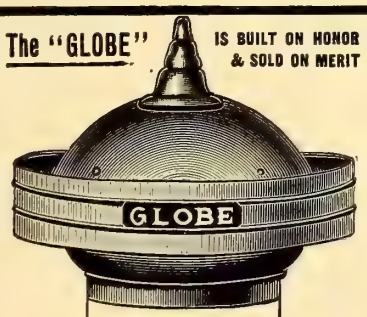
DENVER CHICAGO TRENTON

Showrooms: 91 Dearborn Street

BRANCH OFFICES:

615 Northwestern Building, Minneapolis, Minn.
Builders Exchange, Cleveland, Ohio.
1209 Scarrett Building, Kansas City, Mo.
Monadnock Building, San Francisco, Cal.
77 Richmond Avenue, Buffalo, N. Y.
1108-1122 Nicholas Street, Omaha, Neb.
327-328 Bond Building, Washington, D. C.

The "GLOBE" IS BUILT ON HONOR & SOLD ON MERIT



Patented and Trade-Mark Reg. U. S. Pat. Off.

THE "GLOBE" VENTILATOR

IN GALVANIZED IRON, BRASS AND COPPER
ALSO WITH GLASS TOPS FOR SKYLIGHT

Simple, Symmetrical, Storm-proof, Effective. For perfectly ventilating buildings of every character. Send for model and pamphlet. **Smoky Chimneys Cured**

"Globe Ventilated Ridging"

Mfd. by GLOBE VENTILATOR CO., TROY, N. Y.

The Thousands who have used

Cabot's Shingle Stains

have not done so hap-hazard. They have investigated, calculated—and adopted. They have got beautiful coloring effects, with a depth and richness impossible in paint, and at half the cost—50% cheaper than paint.

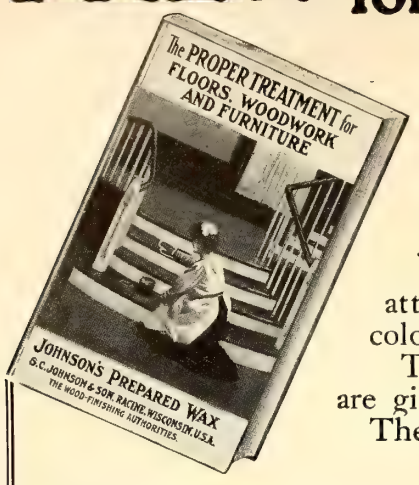
Investigation costs a postal card request for samples and catalogue.

Samuel Cabot, Inc., Sole Mfrs.
131 Milk St., Boston, Mass.

Agents at all Central Points.

Hunt & Grey, Architects, Los Angeles

FREE A Book of Valuable Ideas for Beautifying the Home



WE will send you *free* of charge our book "The Proper Treatment for Floors, Woodwork and Furniture," two sample bottles of Johnson's Wood Dye and a sample of Johnson's Prepared Wax.

This text book of 50 pages is very attractive—80 illustrations—44 of them in color.

The results of our expensive experiments are given therein.

There is absolutely no similarity between

Johnson's Wood Dye

and the ordinary "stain." Water "stains" and spirit "stains" raise the grain of the wood. Oil "stains" do not sink below the surface of the wood or bring out the beauty of the grain. Varnish "stains" are not stains at all. They are merely surface coatings which produce a cheap, shiny, painty finish. Johnson's Wood Dye is a dye. It penetrates the wood; does not raise the grain; retains the high lights and brings out the beauty of the wood.

For artistic coloring of all woods in the following shades:

No 126 Light Oak
123 Dark Oak
125 Mission Oak
140 Manila Oak
110. Bog Oak
128. Light Mahogany
129. Dark Mahogany
130. Weathered Oak
131. Brown Weathered Oak
132. Green Weathered Oak
121 Moss Green
122. Forest Green
172. Flemish Oak
178. Brown Flemish Oak
180. Silver Gray

Johnson's Prepared Wax

will not scratch or mar. It should be applied with a cloth; dries instantly—rubbing with a dry cloth gives a velvety protecting finish of great beauty. It can be used successfully over all finishes.

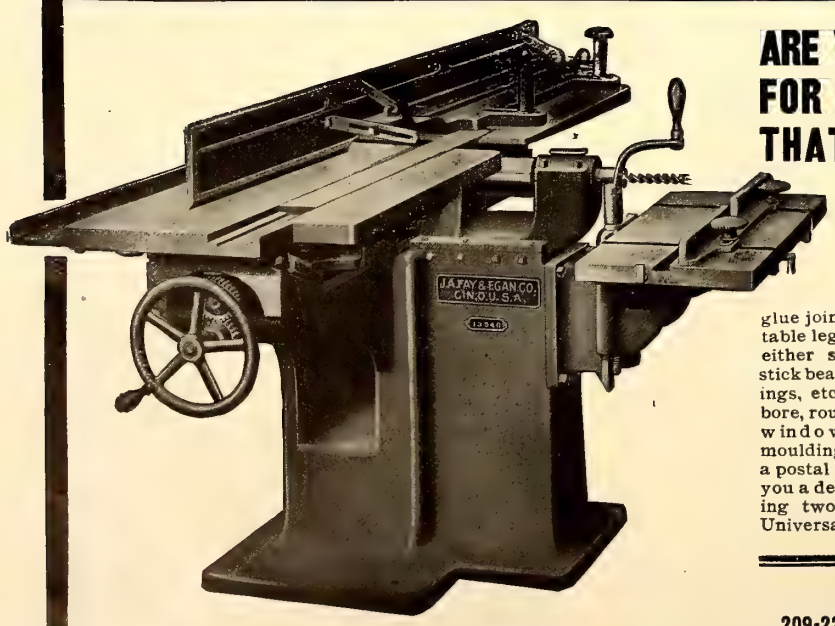
We want you to try Johnson's Wood Dye and Prepared Wax at our expense. Fill out the attached coupon, being careful to specify the shades of dye wanted. We will mail you promptly the booklet and samples. Do not pass this page until you have mailed the coupon.

S. C. Johnson & Son
Racine, Wis.
"The Wood Finishing Authorities"

PLEASE USE THIS FREE COUPON

I accept your offer of Free Booklet, Edition AH-2, and two sample bottles of Johnson's Wood Dye. Send me shades Nos. ... and ... and one sample can of Johnson's Prepared Wax.

Name .....
Address .....
I usually buy my paint at store of
Name .....
Address .....



No. 62. UNIVERSAL WOOD WORKER

ARE YOU LOOKING FOR A MACHINE THAT WILL

plane out of wind, surface straight or tapering, rabbet door frames, rabbet and face inside blinds, joint, bevel, gain, chamfer, plow, make glue joints, square up bed posts, table legs, newels, raise panels, either square, bevel or ogee, stick beads, work circular mouldings, etc., rip, cross cut, tenon, bore, rout, rabbet, joint and bead window blinds, work edge mouldings, etc.? If so, drop us a postal card, and we will send you a descriptive circular showing two views of our No. 62 Universal Wood Worker.

Write
209-229 WEST FRONT STREET
J. A. FAY & EGAN CO.
CINCINNATI, OHIO

Sweetbriar roses must of course be planted for the sake of the fragrant gummy tips of their new shoots.

Woodruff, which is the flavoring for May wine, is easily grown.

The bayberry and sweetfern must not be neglected, and it is likely that you will plant box for its aromatic suggestion of old gardens, and chrysanthemums for the leaves.

Wintergreen is not hard to grow and will carpet the ground under the trees.

Such a garden as this would be excellent for the blind who are restricted to the duller and less developed senses for their knowledge of the world and for their pleasures. It would be quite possible to arrange a park for the blind so that they could find their way unaided by their sense of smell alone.

The tactile pleasures to be derived from plants we may have occasion to speak of later.

PLANTING ON THE SHADY SIDE OF A HOUSE

"Can you suggest an assortment of shrubs or other hardy plants that will require little direct sunlight?" writes J. C. F. "I want to plant them on the east side of my house where they will also be shaded by large trees. Euonymus is planted next the foundations now, and I want to fill the space between that and the path, which is about six feet from the house."

The place seems adapted for rhododendrons and kalmias, which would certainly be the nicest things to have there. They will not bloom much in dense shade, but they will grow and keep green throughout the year. I suppose the euonymus is *E. radicans,* which will grow on the house.

If you care to use a deciduous shrub, Indian currant, *Symphoricarpus racemosus,* would be excellent.

Ferns, Solomon's seal and herbaceous plants of that sort could be used, but I think shrubs will be better.

"Also I should like a vine requiring little sunlight that could be trained over two small windows." *Clematis jackmanni* will grow nicely in such a place.

"Suggestions for the heart-shaped plot of ground surrounded by the carriage turn in front of the house would also be gratefully received. There are about a dozen and a half shrubs now in it, which are partially shaded by maple trees and have not grown well."

These shrubs, as the photograph shows, are planted in the turf, each in a separate little hole, instead of being all in one bed as I prefer to have them, and consequently they look thin and spotty. I should bring them together or else thicken the mass with a shade enduring shrub such as syringa (*Philadelphus*), wych hazel or some of the viburnums.

The poor growth of the shrubs which are there now may be due as much to the maple trees robbing the soil as it is to shade. Maples are shallow rooted trees and it is always hard to make anything grow under them.

MAKING A COUNTRY HOME

(*Continued from page vii*)

homestead shapes itself and the preliminary work has settled down.

But whatever else you do with flowers, you must surely establish a shrubbery. This ought to be an odd piece of ground, never in front of the house, nor conspicuous, but somewhere on a slope or in a swale, where you can go for a quiet hour and forget work altogether. You can make a shrubbery out of wild native plants and get a very good one in that way, for there is not a section of the country that does not afford a dozen ideal bushes, but not always appreciated. To my own shrubbery I add small-growing trees with conspicuous flowers,

such as Magnolia conspicua, some of the finest wild cherries, the hybrid catalpas and the cork-barked maple. This adds to the shade, and if judiciously planted will not disturb the shrubs. Think this matter over carefully and you will find somewhere just the place that we are talking about. The shrubs that I should recommend to start with, and for succession of bloom, are (1) Judas tree. This is the earliest shrub to blossom, that is at the same time hardy, and it stays in bloom for three full weeks. It is a mass of lilac-colored flowers, without a leaf. Then follows a charming display of golden foliage. On the whole, this is one of the finest shrubs in existence, growing eight or ten feet high, or trained as a tree to fifteen feet. (2) The spireas begin very early in the season, while later varieties do not blossom until the last of July or into August. One of the finest of all is Spirea prunifolia, followed by the superb Van Houttei. These should be planted very freely, but not in chunks, as they frequently are. (3) Lilacs constitute the most popular shrubs in existence, and they deserve all the praise and love they get. You can get a dozen of the new French varieties, single and double, and of all shades of red, white and purple, at a very low figure, or can content yourself with the old-fashioned lilac and the white variety, which like to make a small tree; they are good enough, and the purple sort has never been beaten. (4) Tartarian honeysuckle should make number four, and multiplied as fast as possible. Nothing else makes as good a hedge for blossoming. This bush stands from five to ten feet high, and you can trim it as sharply as you please. (5) The old-fashioned snowball should come next, only it must stand out in the full sunshine or it will become a pest with the plant louse; and with it should be planted its cousin, highbush cranberry—a viburnum that is loaded all the autumn with yellow fruit, which turns red for winter, and feeds no end of cedar birds and pine grosbeaks. It is a great thing to have growing by your fences and in corners. (6) Plant weigelias in two or three of the hardiest varieties—especially rosea. This shrub may cause you some trouble, because it has to be trimmed every year, but the plant is gorgeous while in flower. (7) Mock oranges you must have. You can find the old-fashioned sorts among your neighbors, and these are good enough for anybody; but you will do better if you plant some of the late flowering sorts—then have seeds and grow new sorts yourself. People do not know how many fine things they can get by this simple sort of cross-breeding. (8) Altheas blossom in September and October, and although they are not fragrant, they are very beautiful, and just what we need at this time of the year. (9) The Hydrangea paniculata everybody knows for its superb heads of flowers, that run down into cold weather; but there is a new sort, pure white in flower, and beginning to blossom in June, which is better. You can increase your stock of both sorts very rapidly by cuttings, cut off close below a joint, and thrust into the ground either in spring or autumn.

For half a dozen vines I would select to grow over the doorway honeysuckles; the scarlet trumpet and the monthly fragrant growing together. Grapevines are not used half as much as they ought to be, and they are grand on the walls of a house or barn, both for the shade they give and the added fruit. A Worden and a Brighton growing together will yield bushels of grapes in the place of vines that do nothing but give leaves. Clematis paniculata is a wonderful affair, with its pure white fragrant flowers, and is fine for trellises and arbors. Grow with it the purple flowering Jackmann. If your house or any of your buildings are brick or stone, or

Copyright 1908 by Life Pub. Co.

ASSETS AND LIABILITIES
Hand Mounted India Print, 22 *by* 18 *in.* $2.00

Always a Welcome Gift

160 Pictures for 25 Cents

Copyright 1908 by Life Pub. Co.

THE MAN BEHIND THE GUN
India Print, 22 *by* 18 *in.* $2.00

Copyright 1908 by Life Pub. Co.

'WON'T BE NOTHIN' LEFT O' THEM THINGS AFTER THE FUST STORM"
Photogravure, 16 *by* 13½ *in.* 50 *cents*

Have cheerful things about you. On receipt of twenty-five cents, we will send you the richly illustrated catalogue of LIFE'S PRINTS containing 160 reproductions of these famous pictures.

LIFE PUBLISHING CO.,
40 West 31st Street,
New York

Science for the Evenings

The Heavens Without a Telescope

A MOVING PICTURE OF THE UNIVERSE

The Only Combination Sun, Moon, Star and Planet Map

Every Stellar body accurately placed for any date for the next twenty years, in the Northern Hemisphere. Indorsed by leading scientists. Requires no technical knowledge to use it. Complete mastery of the heavenly bodies in a few hours.

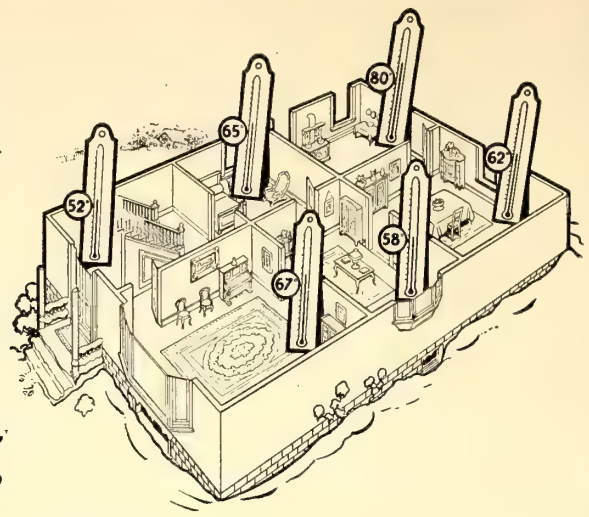
Most graphic way of interesting all in the wonderful planetary system of the Universe. Chart is 15 inches square, with revolving disk map showing all stars. Made of heavy cardboard.

Special Offer. **For a limited time only, we offer our readers this splendid Planisphere at a special reduced price of $3.00, postpaid. Send for descriptive circular.**

MUNN & COMPANY, 361 Broadway, New York

Are you uniformly heated?

If you hang a thermometer in each of the rooms of a house heated by old-fashioned methods, you will find no two of them showing the same temperature—especially on windy days. This is an uncomfortable and unhealthy situation.



AMERICAN RADIATORS & IDEAL BOILERS

will make the thermometers throughout the house tell the same story—a story of equal, soft, clean warmth—perfect sanitation.

Don't think that IDEAL Boilers and AMERICAN Radiators are solely for the wealthy. It is true that they are used in thousands of skyscrapers, public buildings, hospitals, churches, colleges, laboratories, schools, depots, mansions, etc. But we have now simplified them so that in smaller forms they are easily within the reach of the pocket-books of the humblest cottager.

These outfits save money so fast in lessened coal-bills, absence of repairs, toil, and trouble that they quickly repay their cost. They are an *investment*—not an expense.

A No. 015 IDEAL Boiler and 175 ft. of 38-in. AMERICAN Radiators, costing the owner **$118**, were used to Steam heat this cottage.

A No. 3-22 IDEAL Boiler and 400 ft. of 38-in. AMERICAN Radiators, costing the owner **$240**, were used to Hot-Water heat this cottage.

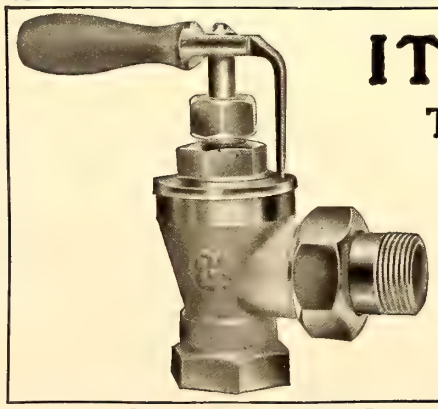
IDEAL Boilers supply heat at night for not less than eight hours in zero weather *on one charging* of coal with ample fire to start up next morning. So simple a child can run the outfit.

Please let us send you our book free—we cannot explain all in one advertisement.

Prices are now most favorable, and at this season you get the services of the most skilled fitters. As easily put in OLD buildings as in new—*farm* or city—without tearing up. Public showrooms and warehouses throughout America and Europe.

At these prices the goods can be bought of any reputable, competent Fitter. This did not include cost of labor, pipe, valves, freight, etc., which installation is extra and varies according to climatic and other conditions.

DEPT. 6 AMERICAN RADIATOR COMPANY CHICAGO



IT SAVES COAL

The Gorton Quick-Opening Steam Radiator Valve

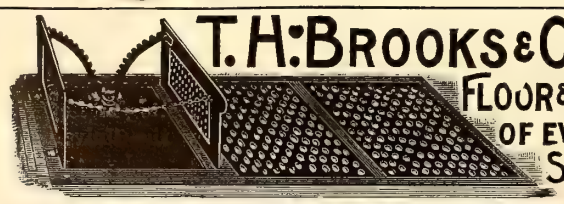
One-third of a turn of the lever handle will open or close the valve

ARE YOU INTERESTED?

Send for Circular and Prices

GORTON & LIDGERWOOD CO.

96 Liberty Street, New York City



T. H. BROOKS & CO. CLEVELAND, O.

FLOOR & SIDEWALK LIGHTS. OF EVERY DESCRIPTION. SEND FOR CATALOGUE.

Our well-equipped Book Department is prepared to recommend & supply

MUNN & CO.

BOOKS

Relating to Architecture, Ceramics, Decoration, Rugs, Furniture, etc. :: ::

NEW YORK

if you have a stone fence to cover, take the Boston ivy, although the Virginia creeper is generally just as good, and is very brilliant in autumn. It drops its foliage, while the ivy does not.

I have given you my best advice concerning flowers for a small beginning, and for a small country place. I advise strenuously against an effort to do too much at the outset. I would grow these flowers mainly, at least for a while, where they can be cultivated with horse power, just as you cultivate your vegetables. Work will be heavy enough at the best, and it is this starting in the country which taxes and puzzles. So if you grow even your shrubs in rows, and cultivate them with the plow for a year or two, you can have more time to lay out your grounds wisely—that is, to let things grow, and you grow with them. Always think of a country home as a growth, and a place where art is as necessary as science. You want not only to cultivate your vegetables well, but cultivate yourself. Every farmer ought to study how to lay out his grounds for the beautiful as well as for the useful.

EDITORIAL NOTE

We are informed by Albro & Lindeberg that the house which figured in the January cover design of AMERICAN HOMES AND GARDENS was planned by them. The Editor of AMERICAN HOMES AND GARDENS was ignorant of the fact at the time and hereby acknowledges his indebtedness to the firm in question.

COMPETITIVE DESIGNS FOR CONCRETE HOUSES OF MODERATE COST. (Ranging from $2000 to $4500 each.) Published by Association of Portland Cement Manufacturers, Philadelphia, Pa. Size, 19 x 15 inches; cloth; illustrated. Price, $1.00.

A pronounced effort has been made to present this publication in that generous style which strongly appeals to lovers of wide margins, choice paper, clean illustrations and practical descriptions. The folio is deserving of immediate recognition by architects, builders and others interested in variations on designs and changes in materials of construction of economic homes. The results obtained are by the competitive method, and the prize plans for concrete houses with description, cost, detail estimate, elevation, cross section and floor plan are technically complete, and effectively show how departures can be made from the methods and substances used in the building of the old, time-honored types. The designs are in two kinds, single or detached and twin or semi-detached dwellings, and the issue comprises a report of the jury of award on several classes, the single construction to cost respectively $2000, $3000 and $4500, and the twin at prices not to exceed double the above stipulations. Not the least feature of the publication is the report of the awarding committee, with its critical and suggestive notes that strengthen the numerous data which accompany the drawings and text of the prize winners. First, second and third prizes and honorable mention in the six classes are illustrated by twenty-four half tones, and each of the latter requires from three to six accessory illustrations. These prize plans for concrete houses are but one of the very extensive and powerful indications of the widespread interest in cement as a structural material.

The Tone the Hardware Trimmings Impart

Tastefully designed hardware fittings in full sympathy with the style of architecture add a tone to any home.

Secure this tone, whatever the woodwork or finish, by choosing the particular design to harmonize, in

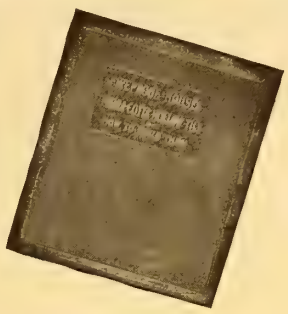
Sargent's
Artistic Hardware

Combines beauty with the highest quality, art with durability. A complete line of each design.

FREE—Sargent's Book of Designs

Shows over seventy beautiful designs and is a guide to the selection of hardware. Free on request, also, our *Colonial Book*, in which we illustrate Cut Glass Knobs, Front Door Handles, Door Knockers, and other fittings particularly appropriate for colonial houses.

Sargent & Co.,
156 Leonard St.,
New York.



Ask our nearest office for a copy of this book.

This Book Will Tell You
How You Can Build
Your House Fireproof
With
TERRA COTTA HOLLOW TILE

Besides the inestimable value of their being fireproof, such buildings are better than frame, brick-and-wood, or concrete-and-wood because they are of

Enduring Masonry Construction Throughout

By reason of the indestructibility of the material and their substantial construction, these houses

Cost Far Less for Maintenance and Repairs

than is the case with buildings of frame or brick-and-wood. Floors of wooden joist construction warp and crack. Floors of Fireproof Terra Cotta Hollow Tile endure for all time.

Exteriors of frame houses must be painted frequently, walls of Cement Coated Terra Cotta Hollow Tile, never. Walls of wood, stone, concrete or brick absorb, retain and carry to the interior of the house, the frost of Winter and Heat of Summer. The air space in walls of Terra Cotta Hollow Tile furnishes complete insulation against atmospheric conditions, thereby reducing the cost of heating to a minimum, and buildings of this material compared with brick, frame, stone, concrete or a combination of all four are

WARMER IN WINTER—COOLER IN SUMMER

Houses with walls of brick, stone, concrete or frame, must be "furred" or lined with wood to be plastered, and they carry sound vibrations and are subject to the penetration and ravages of vermin. Terra Cotta Hollow Tile Houses require no furring, the plastering being applied direct to the Hollow Tile, and they are

Moisture Proof—Sound Proof—Vermin Proof

When it is considered that a residence with all these advantages and completely Fireproof can be built at as low cost as one of brick, brick-and-wood, stone-and-wood, concrete, or frame, is it not worth while to talk with your architect about this modern construction?

All competent architects are familiar with methods of designing and building houses of Terra Cotta Hollow Tile. A copy of our book showing how houses are constructed of Fireproof Terra Cotta Hollow Tile will be sent upon request.

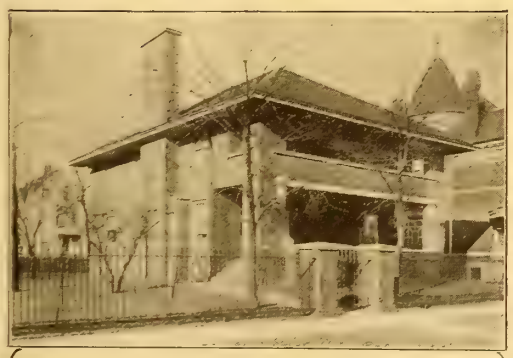
National Fire Proofing Company

Manufacturers of Terra Cotta Hollow Tile

Contractors for Construction of Fireproof Buildings. The largest Company in the world devoted exclusively to the business of fireproof construction. Capital—Twelve and one-half Million Dollars.

Pittsburgh, Fulton Bldg.
Philadelphia, Land Title Bldg.
Washington, D. C., Colorado Bldg.
Boston, Old South Bldg.
Cincinnati, Union Trust Bldg.
St. Louis, Victoria Bldg
San Francisco, Monadnock Bldg,
Chicago, Com'l National Bank Bldg.
New York, Flatiron Bldg.
Minneapolis, Lumber Exchange
Cleveland, Cuyahoga Bldg.
Los Angeles, Union Trust Bldg.
Toronto, Can., Traders Bank Bldg.
London, Eng., 27 Chancery Lane

26 Factories throughout the United States.



Robt E Seyfarth Architect
Corn Exchange Bank Bldg Chicago

Home of H C. Dickinson
Englewood. Chicago

An artistic fence around your grounds counts as much as an appropriate frame around a fine picture.

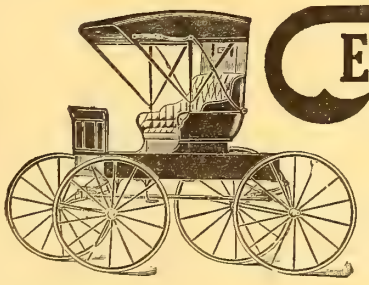
Stewart's Iron Fence and Entrance Gates are artistic, practically permanent and are specified by leading architects. There are hundreds of designs to choose from—elaborate ones and many *of small cost as well.*

State work desired, style of house, etc. Our agencies in all principal cities will submit designs and estimates. Where not represented we gladly send designs or photographs, take measurements and erect. Satisfaction *guaranteed.* Write for booklet. Address

STEWART IRON FENCE

THE
Stewart Iron Works Co.
1726 Covington Street
Cincinnati, O.

The largest makers of iron fence in the world.



ELKHART BUGGIES

are the best made, best grade and easiest riding buggies on earth for the money.

For Thirty-Six Years

we have been selling direct and are

The Largest Manufacturers in the World

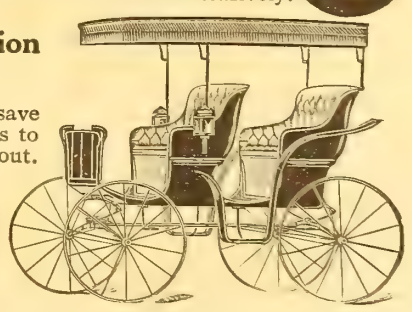
selling to the consumer exclusively.

We Ship for Examination and Approval

guaranteeing safe delivery, and also to save you money. If you are not satisfied as to style, quality and price you are nothing out.

May We Send You Our Large Catalogue?

Elkhart Carriage & Harness Mfg. Co.
Elkhart, Indiana



The expense and annoyance of painting will not recur every year or two if you use

DIXON'S SILICA-GRAPHITE PAINT

the "Proven Shield for Steel Work." Durability records in all climates; write for a few.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

The Pierce Arrow

The Pierce Arrow is made this year in more styles than ever before, but every Pierce car is built on the chassis which has made the Pierce a synonym for the service sought by every automobile owner but obtained by only a few. The 1909 Pierce models include Runabouts, Touring Cars, Broughams, Suburbans, Landaus, and Landaulettes, 24 to 60 H. P., 4 and 6 Cylinder.

The GEORGE N. PIERCE COMPANY, (Member Association Licensed Automobile Manufacturers) **BUFFALO, N. Y.**

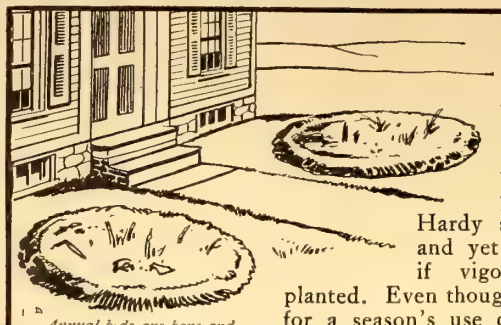
+NA
7100
A512
Hort.

AMERICAN HOMES and GARDENS

MARCH 1909

MUNN & COMPANY PUBLISHERS

Vol. 6, No. 3 $3.00 A YEAR Price 25 Cents.



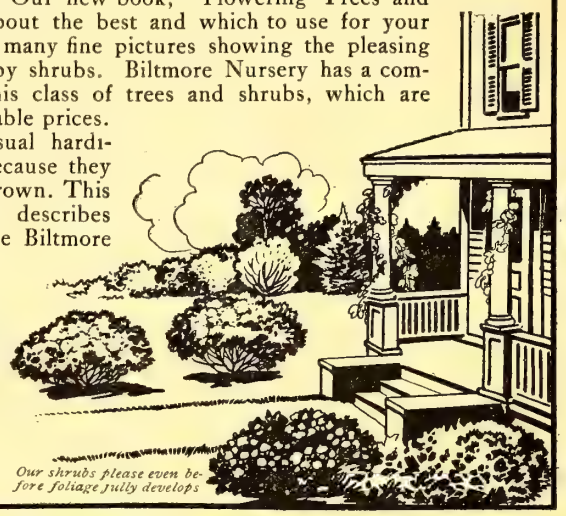
Annual beds are bare and ragged in early spring

Why do the planting around your house on a one-year plan? It costs only a little more to have plants and shrubs that will fulfil their purpose year after year. Hardy shrubs are permanent, and yet they give quick results if vigorous specimens are planted. Even though a shack good enough for a season's use could be had for only one-tenth as much as the cost of a well-built and completely finished modern dwelling.

You Wouldn't Build a New House Every Year

By working to a definite purpose in laying out grounds, shrubs for permanent results will cost little if any more than annuals. In the one case the first cost is all, in the other the expense becomes a yearly one. The hardy and permanent plants afford immensely more pleasure, first and last, than can be expected of annuals, however beautiful for a season. Our new book, "Flowering Trees and Shrubs," tells about the best and which to use for your purposes. It has many fine pictures showing the pleasing effects afforded by shrubs. Biltmore Nursery has a complete stock of this class of trees and shrubs, which are offered at reasonable prices. They have unusual hardiness and vigor because they have been well grown. This handsome book describes and illustrates the Biltmore offerings of trees and shrubs in a helpful, attractive manner. Write for a copy—free.

Biltmore Nursery
Box 434
Biltmore, N. C.



Our shrubs please even before foliage fully develops

Sun Dials

Artistic *Imposing*

The most beautiful garden is incomplete without a Sun Dial

Our Booklet, "Where Sun Dials are Made," containing illustrations of horizontal dials, pedestals and wall dials, sent gratis upon request. We have superior facilities for executing distinctive designs. Correspondence invited.

E. B. Meyrowitz

Branches in New York, St. Paul, Minneapolis, London, Paris

105 E. 23d St., New York

¶ Americans are now building more beautiful houses and are decorating and furnishing them with greater care and in better taste than ever before.

¶ The most potent single influence working for higher standards in architecture and decoration is

The Architectural Record

¶ If you are interested in building a building of any sort, you will be interested in The Architectural Record.

Send for a Sample Copy—Free.

THE ARCHITECTURAL RECORD COMPANY

11 to 15 East 24th Street, NEW YORK 511 Monadnock Building, CHICAGO

SMITHSONIAN
AUG 12 1985
LIBRARIES

IN reproducing the quaint lighting effects of the Orient we know of none more beautiful than the Japanese lantern, in its soft harmonious colorings.

AS with these so with other lighting fixtures in Period, the ENOS conceptions notably conform in every case with the greatest exactitude to the style of decorations required.

THE ENOS COMPANY

MAKERS OF LIGHTING FIXTURES

Office and Factory: 7th Av. and 16th St. Salesrooms: 5 W. 39th St.
NEW YORK

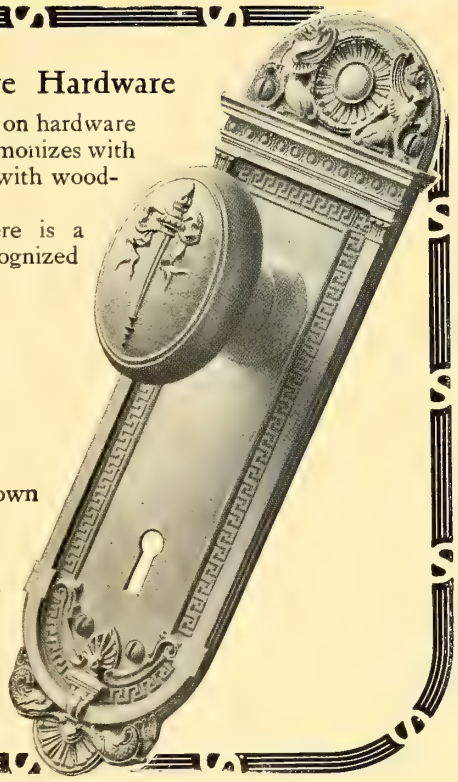
Baltimore: 519 North Charles St.
Pittsburg: G. P. Norton 4th and Penn Sts.
St. Louis: N. O. Nelson Mfg. Co.
Seattle: Cox & Gleason 1914 Second Ave.
Chicago: W. H. Cowan & Co., 203 Michigan Blvd.
San Francisco: 1748 California St.
Toronto: 94 King St. West
Spokane: Cutter & Plummer, Inc.

Distinctive Designs in Decorative Hardware

When building or remodeling your house, put on hardware fittings of artistic worth—adopt a design that harmonizes with the architectural scheme and accords perfectly with woodwork and finishing.

Whatever your chosen style may be, there is a complete line of hardware trimmings of recognized decorative value in

Sargent's
Artistic Hardware



These various designs—over seventy—are shown and described in

Sargent's Books of Designs—free

This book is a guide to the selection of hardware.

Free on request, also, our *Colonial Book*, in which we illustrate Cut Glass Knobs, Front Door Handles, Door Knockers and other fittings particularly appropriate for Colonial Houses.

SARGENT & CO., 156 Leonard St., New York

Many Helpful Hints

given in our booklet

"Furniture of Character"

Valuable inside facts about good furniture, which make it easy to choose wisely. "Exceedingly Beautiful" illustrations of some of the notable

Berkey & Gay

Dining Room, Bed Room and Library Furniture that possesses genuine artistic merit and the highest intrinsic value.

These are merely suggestions of a story no advertisement can tell, but which will be sent for 16 cents in U. S. stamps to partly cover the expense. If not acceptable, return booklet and stamps will be refunded.

This furniture can be obtained at modest prices through furniture dealers, and bears the guarantee shop mark of a business concern whose integrity is of fifty years standing.

BERKEY & GAY FURNITURE CO. Estab. 1859
Please Address Dept. M. Grand Rapids, Mich.

W. G. ROBINSON, Architect, Grand Rapids

SUPERIORITY

is the keynote of success. Pure colors ground in England, as fine as artist colors, combined with preserving oils, have made

DEXTER BROTHERS'
English Shingle Stains

superior to all others. Send for sample boards.

DEXTER BROTHERS' COMPANY
209 Broad Street, BOSTON

AGENTS: H. M. Hooker Co., 128 W. Washington St., Chicago; W. S. Hueston, 6 E. 30th St., New York; John D. S. Potts, 218 Race St., Philadelphia; W. W. Lawrence & Co., Pittsburg, Pa.; F. H. McDonald, 619 The Gilbert, Grand Rapids, Mich.; F. T. Crowe & Co., Seattle, Spokane, Tacoma, Wash., and Portland, Ore.; Klatt-Hirsch & Co., 113 Front St., San Francisco, Cal.

Sample and Circular Free.

A House Lined with
Mineral Wool

as shown in these sections, is ***Warm in Winter, Cool in Summer,*** and is thoroughly DEAFENED.

The lining is vermin-proof; neither rats, mice, nor insects can make their way through or live in it. MINERAL WOOL checks the spread of fire and keeps out dampness.

Correspondence Solicited.

U. S. Mineral Wool Co.
140 Cedar St., NEW YORK CITY.

BURLINGTON Venetian and Sliding BLINDS

Venetian Blind for inside window and outdoor veranda. Any wood; any finish to match trim.

SCREENS AND SCREEN DOORS

¶ Equal 500 miles northward. Perfect privacy with doors and windows open. Darkness and breezes in sleeping rooms.

Sliding Blinds for inside use. Require no pockets. Any wood; any finish.

WRITE FOR OUR CATALOGUE, PRICE-LIST AND PROPOSITION TO YOU

BURLINGTON VENETIAN BLIND CO., 975 Lake St., Burlington, Vermont

Join the Fight

200,000 Persons were killed by the recent Earthquake in Italy

200,000 Persons are killed annually by Tuberculosis in United States alone

‡ With the assistance and co-operation of the International Tuberculosis Exhibition and the American National Red Cross Society

‡ **THE METROPOLITAN MAGAZINE**

has entered upon one of the greatest campaigns ever inaugurated to conquer the dread tyrant—**CONSUMPTION**

‡ The entire exhibition which was attended recently in New York by nearly one million persons will be, as far as possible, practically reproduced in the next few issues of the magazine.

‡ Is any member of your family afflicted? If so, **JOIN THE FIGHT**

‡ If not, **JOIN THE FIGHT** anyway for your own good and for the good of humanity in general.

‡ Get **THE METROPOLITAN MAGAZINE** and read it for a few months. It will teach you how to care for yourself; how to care for others; how to fight the White Plague; how to save lives. Send it to those that you know who are suffering from this dread disease.

‡ Between 20 and 45 years one-third of all deaths are caused by CONSUMPTION.

Order the TUBERCULOSIS SERIES of
THE METROPOLITAN MAGAZINE
from your Dealer at once

Join the Fight

Special Offer

F. W. Kolthoff & Co. have ready for immediate shipment One Thousand Dozen finest selected perpetual blooming Roses, all guaranteed, plants worth 25 cents each, which they are offering at

$1.00 Per Dozen Delivered

They offer their advice on landscape designing, backed by **79 years** of experience, to anyone taking advantage of this offer. For this service experts are drawing as high as $50.00 per day. We offer it **free of charge**, to our customers.

Write for illustrated booklet of special offers for Spring Season 1909, also containing full description and photograph of the Catalpa Bungii—America's most beautiful lawn tree.

Don't forget. One dozen finest assorted ever blooming Roses, sufficient for a complete **Rose Bed, only $1.00 delivered.**

Order at once as supply is limited.

F. W. KOLTHOFF & CO., Norwood, Cincinnatti, Ohio
ESTABLISHED 1830

Van Dorn Iron Works Co.

PRISON, HOUSE & STABLE WORK

JOIST HANGERS
LAWN FURNITURE
FENCING, ETC.

CLEVELAND, OHIO

Sold Under Three Warrants

We sell all our seeds under three warrants, which practically cover all risks. This is the reason the largest gardeners and planters in the country sow

GREGORY'S Seeds

They take no chances. Everyone interested in vegetable and flower growing should send for **Gregory's Seed Book—It's FREE**
Write to-day for a copy.

J. J. H. GREGORY & SON, MARBLEHEAD, MASS.

SPECIAL OFFER to Carpenters

BUILDERS AND OWNERS OF HOMES

IVES PATENT WINDOW VENTILATING LOCK. A Safeguard for Ventilating Rooms. Pure Air, Good Health and Rest Assured.

To introduce this article, Four Ventilating Locks in Genuine Bronze, Brass or Antique Copper Finish will be mailed to any address prepaid for One Dollar. Will include a forty-page Hardware Catalogue and Working Model to carpenters who wish the agency to canvass for its sale. Address

PATENTED

The H. B. Ives Co. NEW HAVEN, Conn., U. S. A.

"To have your roof last—
Use Ruberoid Roofing first"

It's the Wear

you get out of a roofing that proves its economy and its value — not the price you pay per roll.

Cheap roofings are dear at any price. They cost ten times more for repairs than you could possibly save on their original cost — and they don't last.

RUBEROID
TRADE MARK REG. U. S. PAT. OFFICE
ROOFING

is the most economical roofing you can use because it will outlast any other. It is moderate in price, costs less than metal or shingles, and is weatherproof, waterproof and fire-resisting.

It is made in

Red, Brown, Green and Slate Color

and is ***the only*** permanent roofing with permanent colors.

Write for Samples and Booklet No. 15

THE STANDARD PAINT COMPANY

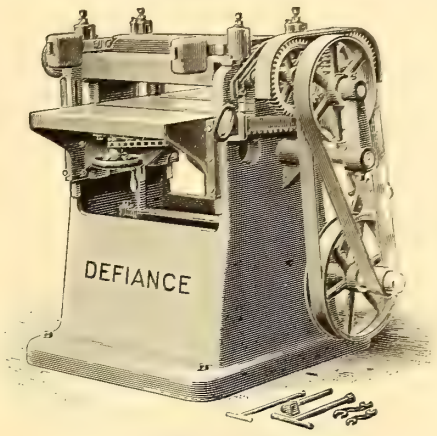
100 WILLIAM STREET
NEW YORK

Chicago, Kansas City, Boston, Philadelphia, Memphis, Atlanta

"DEFIANCE"
Wood-Working Machinery

For Pattern Shops and General Wood-Work

Invented & Built by
THE DEFIANCE MACHINE WORKS
DEFIANCE, OHIO



24-Inch Single Surface Planer

TERRA COTTA & POTTERY

For Garden and Home

Flower Pots — Sun Dials
Jardinieres — Statuary
Benches — Flower Boxes
Fountains — Ferneries

Strength Durability and Beauty

Artistic designs and superior workmanship, with carefully selected and properly burned clay, assure individuality in all Galloway productions. The kind that add character to your house and grounds.

Write for book "Garden and House Terra Cotta," illustrated with copper engravings of choice examples of the potter's art.

William Galloway, 3222 WALNUT STREET PHILADELPHIA

JOHN ERICSSON
1803

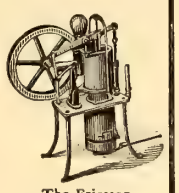
IN celebrating the Centennial of Lincoln, it is eminently proper that we let grateful remembrance turn also toward one who contributed so much to the end toward which Lincoln was working — the preservation of the Union. Captain Ericsson has received, from his native land and that of his adoption, signal honor for his invention of the Monitor. In fact, his maritime achievements have been of such inestimable value as to cast into the background another of his great masterpieces, really the invention in which he took greatest pride, namely the

ABRAHAM LINCOLN
1809

Hot-Air Pump

which to-day brings into the homes of all mankind the domestic comforts that follow an abundance of water easily and cheaply brought to hand. *Every pump is a monument to the immortal genius of John Ericsson.* The cheapening of raw materials and the saving in the cost of manufacture accomplished within recent years, place his wonderful invention within easy reach of the man of moderate means.

Be sure that the name "RECCO"-ERICSSON appears upon the pump you purchase. This name protects you against worthless imitations. When so situated that you cannot personally inspect the pump before ordering, write to our nearest office (see list below) for the name of a reputable dealer in your locality, who will sell you only the genuine pump. Over 40,000 are in use throughout the world to-day. *Write for Catalogue E, and ask for reduced price-list.*



The Ericsson Hot-Air Pump

Rider-Ericsson Engine Co.

(*Also makers of the new* "Recco"-Electric *Pump*)

35 Warren Street, New York
239 Franklin Street, Boston
40 Dearborn Street, Chicago
40 North 7th Street, Philadelphia
234 Craig Street West, Montreal, P. Q.
22 Pitt Street, Sydney, N. S. W.

THE **most modern, and best illuminating and cooking** service for isolated homes and institutions, is furnished by the **CLIMAX GAS MACHINE.**

Apparatus furnished on **TRIAL** under a **guarantee to be satisfactory** and in advance of all other methods.

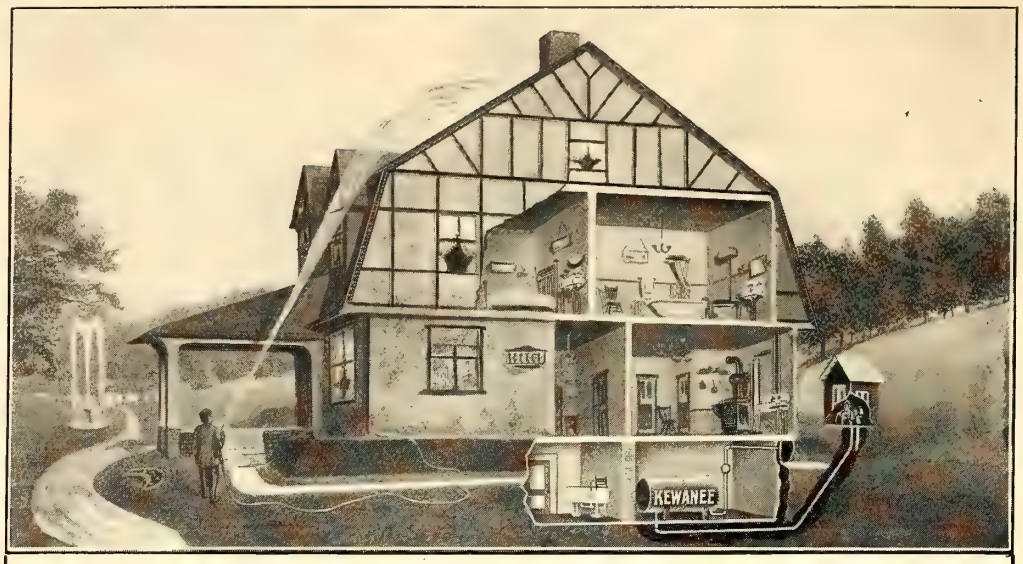
Cooks, heats water for bath and culinary purposes, heats individual rooms between seasons—drives pumping or power engine in most efficient and economical manner — also makes brilliant illumination. **IF MACHINE DOES NOT MEET YOUR EXPECTATIONS, FIRE IT BACK.**

Send for Catalogue and Proposition.

Low Price Better than City Gas or Electricity and at Less Cost.
Liberal Terms

C. M. KEMP MFG. CO.
405 to 413 E. Oliver Street, Baltimore, Md.

THE KEWANEE SYSTEM OF WATER SUPPLY



Perfect Water Supply Service For Your Country or Suburban Home

YOU can have a thoroughly efficient water service in your home—service equal to that offered by the best city water supply. You can have an abundant supply of water delivered under strong pressure to the bathroom, kitchen, bedrooms, laundry, lawn, garden, barn—anywhere.

This service and first class fire protection will be yours, if you install

The Kewanee System of Water Supply

With the Kewanee System there is no elevated or attic tank to leak, freeze, overflow or collapse. Instead, a Kewanee Pneumatic Tank is placed in the cellar, buried in the ground or located in a special pump house.

The Kewanee Tank rests on solid ground where it can do no damage. It is protected from all extremes in weather, assuring a fresh, usable supply of water during all seasons. It is made of steel plates so that it will last almost indefinitely.

Pumping the water creates air pressure in the tank; and then water is delivered to all fixtures and hydrants. 40 pounds is a good average pressure in the Kewanee System, which is equal to the pressure from an elevated tank 93 feet high.

And we furnish complete water supply plants—tank pumping outfit, valves, gauges, connections and all.

Kewanee Pneumatic Tanks and Kewanee Systems are imitated. Accept no tank as a Kewanee Tank unless it bears this KEWANEE trade mark. Be sure and look for our name-plate on all pumping machinery.

By purchasing a complete Kewanee System, including the genuine Kewanee Pneumatic Tank and accessories which we recommend, you will be taking no chances—we guarantee that.

Over 9,000 Kewanee Systems in successful operation, providing water for country and suburban homes, clubs, hotels, schools, apartment buildings, public and private institutions and towns.

Our engineering service is free. No charge for specifications and estimates. Everything fully guaranteed—a guarantee that protects you.

Write for our 64-page illustrated catalog. Please mention this publication and ask for catalog No. 36.

Kewanee Water Supply Company, Kewanee, Illinois.

1212 Marquette Building, Chicago, Ill. 710 Diamond Bank Bldg., Pittsburg, Pa.
1566 Hudson-Terminal Fulton Building, 50 Church Street, New York City.

Moon's Large Evergreens will at once produce results like this

Anyone who has a new lawn or is going to plant Trees and Shrubbery of any kind, ought to have our catalogue of **"Hardy Trees and Plants for Every Place and Purpose."** Write for it.

THE WM. H. MOON COMPANY

Philadelphia Office, 21 S. Twelfth Street **Arborlea, MORRISVILLE, PA.**

MAKING A COUNTRY HOME

By E. P. Powell

II. THE VEGETABLE GARDEN

IN THIS article I shall try to give notes out of my own experience in the way of making a vegetable garden, that will do the most to make a country home successful, and at the same time cause as little work as possible. A newcomer from the city can not be expected to know very much about the different sorts, where the making of a careful selection is all important. I think it is this choice of seeds which will tell the most in gardening, not only in the growth but in the satisfaction which comes from having the primest food for the table. Then, again, it will not do to start out with egg plants and onions and other vegetables that need a lot of work. I have learned myself to let other folks grow my cabbages and some other things that do the best in large fields.

The best policy for a beginner with garden seeds is to build a cheap hotbed, or at least have it to use as a cold frame. There is not much trouble involved in building such a frame, and after it is out of heat it will serve as a seed bed for several years. Remove the sod, and pack horse manure in layers with compost or straw, and leave it until there is heat. Spread over the top fine garden soil, mixed if possible with sand. This bed can be inclosed with thick boards or planks; and the glass frame to cover it should be on hinges, to lift it easily, or it should be arranged for easy sliding. In such a bed you will start your cabbage and tomato seeds, and in one end grow a little lettuce for early use. If your garden is not yet in good tillage, or does not get the morning sun, it will be well to start a few lima beans, squashes, cucumbers and melons on bits of sod inverted. Transplant these, sod and all, when they have grown two or three inches, and the garden is warm enough to take them. The plum and cherry tomatoes will sow themselves about your garden, giving you no trouble but to stake them.

You will find after a bit that it will not pay you to grow all sorts of vegetables, no matter how large your garden may be, and how good the soil. Onions, for instance, require a good deal of weeding, and those who make a specialty of growing them can furnish them so cheaply that I prefer to buy. If you have corners where you can grow a few cabbages, try the wrinkled Savoy sorts, and a few of the red, but you will have so much trouble with worms that you may decide to do as I am doing—leave your cabbages for a specialist. The egg plant is a delicious vegetable, but it needs a long season, and has a bad habit of not giving good results for an amateur. Cauliflower is a delicious vegetable, and you may be so fond of it that you are willing to stand guard against the worms. Celery growing depends upon having a soft rich soil and your patience in taking good care of the growing plant. As a rule the common country garden is not the place for growing this vegetable successfully—that is, you can not compete with that which comes in the market so cheaply and so high flavored.

Having told you so much that may be omitted, I must give you a good list of the indispensables. My own garden makes hobbies of peas, corn, potatoes, beans, tomatoes, squashes; and I assure you that you will find all that you want to do in growing a good succession of green corn; beans, both wax and shell; and a big supply of tomatoes for summer, and squashes for autumn and winter. Then my lettuces are as fine as rich soil will produce, and my bed of beets and carrots complete the cycle that I toil over. Lettuce should be sown just as early as possible, around the

edges of your compost piles, or wherever else you can get the very essence of plant food. I have yet to find a better sort for everybody's sowing than the Mignonnette. This is a wonderful little hard-heading sort, growing with speed, and very sweet. Another capital kind is the Hansen, and another the Golden Queen. The largest head that I have seen, measuring seven or eight inches in diameter through the solid part, is the Marblehead Mammoth. The May King is a very early sort that gives good heads without much special care, and it is a good sort for growing in your cold frame for late use.

After the lettuce is cared for, and just as early as the soil is friable, put in peas and potatoes. I do not believe that one person in fifty, even in the country, knows what our very best peas are. They go on growing the old marrowfats, and many farmers have only the field peas. I wish they would try for earliest the Gradus, and with that the Thomas Laxton. For a second early the Senator is a grand advance, and British Wonder is another. They are so sweet that you may imagine them to have been supplied with sugar in the cooking. The Hero is a large-podded sort with big peas, and the quality is beyond criticism. I used to get from Mr. Gregory A No. 1 and Mayflower, but I do not find them any longer on the market. They were remarkable for thin skins and sweetness. Now let me suggest (1) that you select varieties that grow from two to three feet high, and do not need bushing. Unless your ground is just right the very dwarf sorts are liable to dry up and give you no satisfaction. The tall ones need too much bushing. (2) Select at least three sorts that will come on in succession. (3) Make your sowings from early in April until the first of June—so as to make succession for at least three months. (4) Sow your peas in trenches about four or five inches deep, and cover with friable soil mixed with compost. Peas are good eaters. (5) Buy your seed wholesale, that is, select a first-class dealer and stay by him year after year. It will cost you about half as much for your seed when he puts you on his list of wholesale dealers. I advise you also to experiment with one or two new varieties each year.

Potatoes for home use should go in just as early as the soil will permit. For early potatoes I know nothing better than Bliss's Triumph. In Florida they will hardly grow anything else. It starts quickly and ripens quickly; is a bright red in color; and the quality is good, but not the best. A good deal better potato is Norton Beauty; this is very productive and very early, and the flavor is nearly as good as the State of Maine, which is saying a good deal. This last named variety is to my notion the very ideal. It gives big crops, and the potato bursts open just enough, in cooking, to make you dream of the richness inside. Close after this put Gold Coin, and you will have all you want—a vigorous, productive, handsome, and most excellent sort. All of these will do well in the garden, but the last two are the prime sorts for field planting. Do not hill up your potatoes, but run your cultivator, and keep the soil loose.

About the first of May I plant my corn and my beans, sometimes a little sooner. Both of these are liable to catch a frost; if so, I have retained seed to plant over again. I find it better to run the risk, because three seasons out of four I will gain ten days in my supply. Of corns, I experiment with the best advertised sorts, and sometimes get something extra good; but I rely upon my own cross-breds for main supply. I created these by crossing the Black Mexican with the Henderson and the Evergreen. The result is large ears of black and white corn of the most delicious quality.

(Trade "Standard" Mark)

Baths and Lavatories

because of their lasting service, minimize the cost of future maintenance. The installation of these splendid sanitary fixtures means that the first investment in your bathroom equipment is your final one.

OUR NEW BOOK, "MODERN BATHROOMS"

is beautifully illustrated. It shows you the way to most economically equip your bathroom, and how it may be made as permanently sanitary and as attractive as any room in your home. It gives practical demonstration of how to increase the actual cash-value of your house when installing bathroom, kitchen or laundry fixtures. *Write for your copy today. Enclose six cents postage and give us name of your architect and plumber, if selected.*

Address **Standard Sanitary Mfg. Co.**, Dept. 23 - Pittsburgh, Pa., U. S. A.

Offices and Showrooms in New York: **"Standard"** Building, 35-37 West 31st Street.

Louisville: 325-329 West Main St. Pittsburgh: 949 Penn Ave. New Orleans: Cor. Baronne & St. Joseph Sts.
London, Eng.: 22 Holborn Viaduct, E. C. Cleveland: 648-652 Huron Road, S. E.

5 Strong, Hardy, Three-Year-Old GRAPEVINES $1.00 SENT PREPAID

No garden is complete without a few grapevines. It is not much trouble to grow grapes, and we offer you five strong, hardy, three-year-old vines for $1.00. These vines will bear the year after planting. They are the best varieties, as shown by the following list, from which a choice can be made:

(Red) **Brighton, Delaware, Lindley;** (White) **Niagara, Diamond, Pocklington;** (Black) **Concord, Worden, Moore's Early, Wilder.**

We carry the largest stock of grape vines and small fruit in the country, and we have a national reputation for selling only choicest varieties. All our vines are guaranteed to be just as represented or money refunded. Order now and vines will be sent proper time to plant.

We also offer **10 strong, hardy, two-year-old vines for $1.00,** sent postpaid. These vines will grow anywhere. Just what the farmer needs for planting along fences and buildings. With every order we send our valuable booklet full of information about grape culture, pruning, etc. Grapevines add beauty and value to the place, and furnish fresh fruit for the table.

T. S. HUBBARD COMPANY, Grapevine Specialists, FREDONIA, N. Y. (*Established 42 years.*)

White Frost Refrigerators

Every woman falls in love with the WHITE FROST at sight. All metal, not a splinter of wood. Round in shape with revolving shelves, quickly taken out and replaced. Enamelled in spotless white outside and inside, the neatest, sweetest, cleanest refrigerator made.

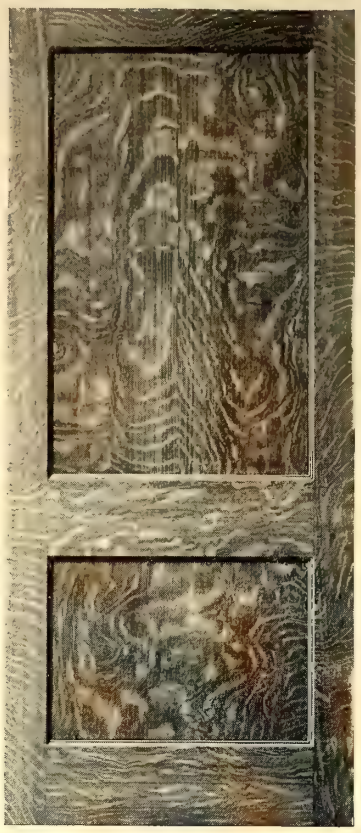
Send Postal Card To-Day for Free Booklet

telling of the perfect sanitation and absolute natural refrigeration of the WHITE FROST. No nasty corners for germs and dirt to lodge—the ONE Sanitary Refrigerator. We will sell you one, at trade discount, freight paid, to your station if your dealer does not handle them.

METAL STAMPING CO., 528 Mechanic St., Jackson, Mich.

"Dear Bob, buy me a White Frost Refrigerator"

Look Into The Door



Did you ever stop to think just why some doors stick, warp, shrink, open at the joints and are always causing trouble? You would not buy a watch without looking at the works. The works of a door are just as important to its performance as the works of a watch.

Morgan Doors

are beautiful and durable—they are constructed so that they will never warp, twist, open at the joints, stick or cause any door trouble—they are not heavy or unwieldly—they are beautiful on the outside and have durability built into them.

Look at the works of a Morgan Door—the illustration shown is a cross section of a one and three-quarters inch door, flush molded, two sides with one-half inch, five-ply panel. Note the several layers with the grain running cross-wise—these layers after all moisture has been eliminated are glued together with the very best veneer glue under powerful hydraulic pressure. This makes shrinking, warping or swelling impossible.

Morgan Doors are light, remarkably strong, absolutely perfect in construction and express substantial refinement in every line. They are veneered in all varieties of hard wood, birch, plain or quarter sawed red or white oak, brown ash, mahogany, etc.

Each Morgan Door is stamped "MORGAN" as a guarantee of quality, style, durability and satisfaction. In our new book "The Door Beautiful" we show Morgan Doors in their natural color and tell you why they are the best and cheapest doors for permanent satisfaction in any kind of building.

Architects: Descriptive details of Morgan Doors may be found in Sweet's index, pages 678 and 679.

Morgan Company, Dept. A, Oshkosh, Wisconsin.

Morgan Sash and Door Company, Chicago, Ill. Morgan Company, Oshkosh, Wis.
Morgan Company, Baltimore, Md.

Designed and executed by Chas. Rohlfs, Buffalo, N. Y.

Anna Katherine Green
the author's dining room, finished with

Beaver Board

The Modern Wall and Ceiling Material

Made of selected pure wood fibre, shredded and pressed into panels, 33 sizes of uniform thickness. A non-conductor of heat. A sound deadener. Easily applied. Nails direct to studding.

Takes Place of Both Lath and Plaster

Eliminates unsanitary wall paper. Tint with oil or cold water paint Susceptible to artistic decoration. Descriptive booklet and sample FREE. Write to-day, lest you forget.

The Beaver Manufacturing Co., 264 Perry St., Buffalo, N.Y

Build Your Own Incubators and Brooders

Save money. Thousands are doing it every year. I teach you how and supply all the parts you cannot make, at low prices. My new Lampless Brooder will cost you $4.00. Greatest Brooder invention of the age. Repairs and supplies for all kinds of Incubators or Brooders. My new book of plans and catalogue has over 100 illustrations, showing step by step every stage of construction—so simple a 12 year old boy can follow them. Send 25c coin or U. S. stamps to cover cost. Your money back if you are not satisfied. I allow the price of the book on your first order. Send for the book today. It means Dollars to you.

H. M. SHEER, 464 Hampshire Street. QUINCY, ILL.

No Night Fireman Needed

WITH THIS ONLY SELF-FEEDING HEATER

The Wilks Hot Water Heater furnishes the safest, easiest, cheapest way to provide heat and hot water at all times for farm buildings, garages, cottages, poultry houses, brooders, green-houses, golf and yacht clubs, etc., and is the *only heater that feeds itself*. Improved coal magazine keeps an even fire 10 hours.

Wilks Heaters

are built of best *steel* instead of the unreliable cast iron commonly used. Strongly riveted, caulked and reinforced. *Write for Free Book* describing, giving sizes, prices, etc. State full particulars and we will recommend the best heater for your needs, and guarantee it to give satisfaction if installed according to our directions.

S. WILKS MANUFACTURING CO.
3504 Shields Avenue, Chicago

St. Louis, Mo. Baltimore, Md.

F. Weber & Co.

1125 Chestnut St., Philadelphia, Pa.

Architects' and Engineers' Supplies

"FABRIANO" Hand-Made Drawing Papers
Superior to any other hand-made paper

F. Weber & Co.'s Illustration Boards, Air Brushes and Materials

---

STEEL CEILINGS

For Effectively Decorating All Kinds of Rooms

YOU CAN GET THEM IN

"Berger's Classik"

Appropriate Designs for Residences, Business Rooms, Auditoriums, Etc.

¶ Largest and most complete line of artistic STEEL Ceilings in existence. Covers the field so completely you can get just what is required, whether bold or elaborate designs or something comparatively simple.

¶ Before buying a Steel Ceiling of any description, get full details of Berger's "Classik."

ASK FOR CATALOG D-64

The Berger Mfg. Co., Canton, Ohio New York Philadelphia Boston Chicago St. Louis Minneapolis San Francisco Atlanta

---

STANDING SEAM ROOF IRONS

PATENTED

CLINCH right through the standing seam of metal roofs. No rails are needed unless desired. We make a similar one for slate roofs.

Send for Circular

Berger Bros. Co.
PHILADELPHIA

BRISTOL'S RECORDING THERMOMETERS

make continuous records of atmospheric temperatures, and are designed for both indoor and outdoor temperatures. Send for new catalogues.

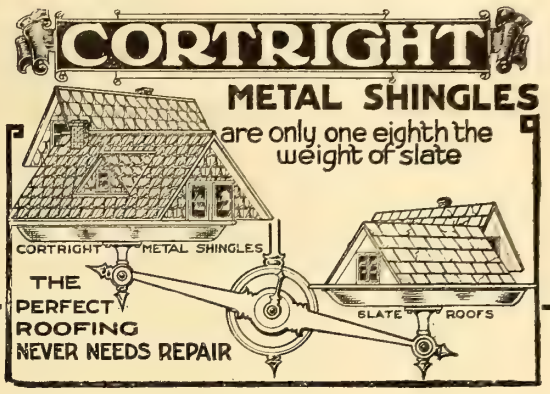
THE BRISTOL COMPANY, WATERBURY, CONN.
NEW YORK *Branches* CHICAGO

I prefer the eight rowed, as giving most corn with least cob. My beans are also hybrids of my own creating. I have started and thrown away over four hundred sorts, and now retain a half dozen sorts of extraordinary qualities, and every one a pole bean. Poling a bean, where the pole stands between two hills, does not make a great amount of trouble, and ten hills will give food enough for a large family. The pods of these sorts are about seven inches long and very solid. There is no vegetable, in my judgment, to excel the string bean of this sort, when well cooked. By breaking down three or four poles in September you can cover them against the early frosts, and have golden string beans until November. Note now that you can grow your beans on the same soil year after year, but your corn will soon exhaust corn food, so you must change location every year. The bean is a legume, and can take nitrogen out of the air; but the corn must take nitrogen out of the soil. Plow under your beans for a while, and then you can use the spot for corn.

Now for our melons and quashes. These want rich soil and a warm exposure; and it is not worth the while to plant the seed before the ground gets permanently warm. My compost piles are five or six in number, and they are scattered about my gardens, where most convenient for distribution. All summer they stand idle, only that right in the top I dig a hole, and fill it with good garden soil, and plant a few squash seed. These will run all over the compost pile and give me dozens of Hubbard squashes, or what is better, Delicious. We owe both of these to Mr. Gregory, and they are splendid products of garden art. My melons I plant where there is plenty of potash and plenty of sunshine. Potash is supplied easily by ashes from a bonfire. As soon as the seed is in, surround the hills with boxes fifteen inches square. When the plants have grown to hit the boxes, thin them to three in a hill, and cover the box with mosquito netting till the beetles are out of the way. Squashes will grow about six feet luxuriantly, and then every one of them be killed by a boring beetle, unless you adopt this simple preventive; cover with fine dirt, three or four inches deep, the first one or two joints, almost as soon as they are formed. These will form roots, and the borer may do his worst at the first joint. The squash will grow on and bear its fruit luxuriantly.

How to get the most out of a given area is one of your problems. Celery can follow your early potatoes; and you may plant your melons between your rows of peas. When the peas are picked, pull the vines, clean up the soil and let the melons occupy it. Turnips will follow almost anything of an early sort, and give you a fine autumn crop. For succession, corn should be planted until June; anything later than that will probably not give you ears. There are a few wild vegetables that must never be overlooked, and some of these it will pay to grow in the garden. Dandelions in rich soil are so much finer for early greens that you might try them. In my Florida garden I grow sooke and sorrel. These are delicious, and they are better when cooked together, for the sorrel adds a touch of fine acid.

My tomatoes are started in the hotbed, or the plants are bought; and they are set as soon as the chilly nights are past. It does not pay to set slim and small plants. After trying a lot of ways, I have come to this sort of training. Either tie to a stout stake four or five feet tall above the ground, or drive three stakes about each plant, over which are slipped, at spaces, barrel hoops. The best tomato will be what you select yourself from the very best fruit. To start with, take one of Mr. Livingston's best sorts, like Dwarf Stone or Earliana. Pinch back some of the side shoots as the



There's a point you architects want to look into. The weight the walls are expected to carry often plays a very important part in the estimate.

Cortright Metal Shingles

make the lightest permanent roof, the tightest roof and the longest wearing roof. They're free from repairs as is evidenced by their splendid record of twenty-one years of service without other attention than an occasional coat of paint. Think of it! Do you know of any other roofing with a record like this? We point to it with pride because we know it has never been duplicated. Give us an opportunity to prove this superiority by sending for our free 56-page book, "Rightly Roofed Buildings."

CORTRIGHT METAL ROOFING CO., Philadelphia and Chicago

SANITAS

THE WASHABLE WALL COVERING

ONLY when you see actual *samples* of dull finished *Sanitas* will you fully appreciate its great superiority over wall papers for beautifully decorating your living room, dining room and every other room at moderate cost.

And the never-fade, never-crack, never-tear, always-new *surface* of SANITAS, dirt-proof, stain-proof—instantly cleaned with a damp cloth — cannot be bought in any other material at any price.

Printed in oil colors on strong muslin, glazed like tile for kitchens and bathrooms.

Write today to our Special Department of Home Decoration. State which rooms you desire to decorate, and receive, free, samples and sketches of clever, new interior treatments. WRITE TODAY.

When you buy Table Oil Cloth, ask for "Meritas," guaranteed perfect. Trade-marked every yard on the back.

THE STANDARD OIL CLOTH CO.
Dept. 11 320 Broadway, New York

The reason why Old English is the best wax
FOR FLOORS, FURNITURE AND ALL INTERIOR WOODWORK
is because it is the "highest quality" wax made. Suitable for hardwood or pine floors—never flakes nor becomes sticky nor shows heel-marks or scratches. Send for FREE SAMPLE of

Old English Floor Wax

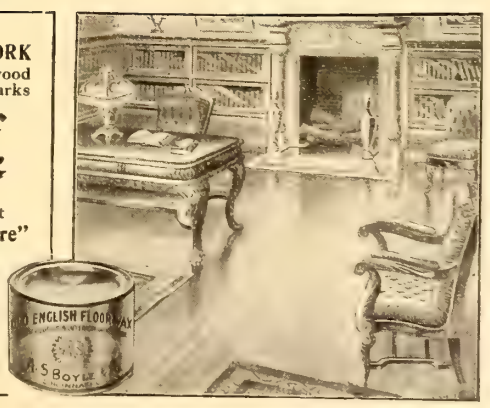
"The Wax with a Guarantee"

And if you wish to learn how to make floors beautiful, request
Our Book—sent free—"Beautiful Floors, Their Finish and Care"

IT DISCUSSES:
Cleaning and Polishing Floors.
Finishing New and Old Floors.
Care of Waxed Floors.
Finishing Kitchen, Pantry and Bath Room Floors.
Finishing Dance Floors.
Removing Varnish, Paint, etc.

Buy Old English from your dealer—50c. a lb.—1, 2, 4 and 8 lb. cans.
One pound covers 300 square feet. Write us anyway.

A. S. BOYLE & CO., 1913 West 8th St., Cincinnati, Ohio
Manufacturers of "Brightener"—which *keeps* floors clean and bright.



FLOORS — NOTE CONTINUOUS BOND — ROOFS

A concrete tank erected on estate of Edmund Tatham, Katonah, New York

Frederick J. Sterner, Architect - - New York
De Lancey A. Cameron, Builder - - New York

Tank designed for storage supply of 15,000 gallons, built entirely of concrete reinforced with Clinton welded wire. Before roof was placed over tank, and during winter months, ice 10 inches thick formed on water stored therein. No cracks or leakage have developed.

Clinton Wire Cloth Company
CLINTON, MASS.

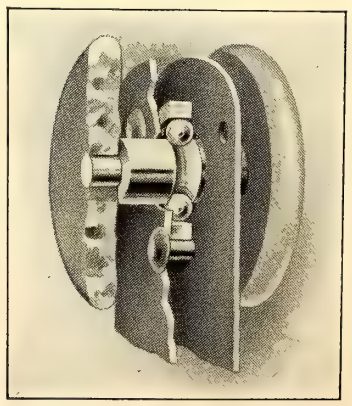
Ceilings — FIREPROOFING DEPARTMENT ALBERT OLIVER 1 MADISON AVE., NEW YORK — WASHINGTON: ROSSLYN SUPPLY CO., COLORADO BUILDING; SYRACUSE, N. Y.: PARAGON PLASTER CO.; ST. LOUIS: HUNKINS-WILLIS LIME & CEMENT CO., SOUTH END 18TH ST. BRIDGE; SAN FRANCISCO: L. A. NORRIS, 835 MONADNOCK BUILDING; SEATTLE: L. A. NORRIS, 909 ALASKA BUILDING — Partitions

Lane's Trolley Parlor Door Hangers and Track

THE particularly distinguishing features of the Lane Trolley Door Hanger equipment are the excellence of the ball bearing and the lateral as well as vertical adjustment of the track.

Lane Trolley Hangers are made in both the rigid and adjustable pendant styles and with both single and double trucks. All are fitted with machined and hardened ball bearings as shown and in all the various details the quality of Lane products is maintained, thus virtually placing them in a class by themselves.

Send for Complete Catalog.



SECTION BALL BEARING IN LANE TROLLEY HANGERS

LANE BROTHERS COMPANY, (The Door Hanger Manufacturers)
434-466 Prospect Street, Poughkeepsie, N. Y.

"You do the designing— Thread & Thrum Rugs we'll make the rug."

Thread and Thrum RUGS
Different from all other rugs, made in colorings to match your decorations. Special styles to go with Mission or Fumed Oak Furniture. Wool weft, seamless, heavy, reversible and durable. All sizes up to 12 feet wide and any length. Sold by best shops in principal cities. If your dealer does not keep them, write Arnold, Constable & Co., New York, for Color Line and Price List.
THREAD AND THRUM WORKSHOP,
Auburn, N. Y.

Of All the BOOKS That Tell of
BEAUTIFUL FLOWERS
at half the usual prices, my new 16th Annual Catalogue is most unique. Complete with all latest and favorite varieties, hardy, northern grown. Now ready; sent FREE. Also for 6 cents and the addresses of two flower-loving friends, I will send a packet of
BURBANK'S SANTA ROSA POPPIES
one of his new, most wonderful productions; a fine new strain of the popular Shirley. Unsurpassed in splendor of color variation; petals beautifully crimped. Or 2 packets for 10 cents, 4 for 15 cents; and a copy of FLORAL CULTURE. Send TODAY. Address Table 196
MISS C. H. LIPPINCOTT *The Pioneer Seedswoman of America*
602-604 70th Street, S., Minneapolis, Minn.

Build Your Own Incubators and Brooders

and save half the purchase price. Any one can do it with my plans. I furnish the mechanical parts, Lamps, Regulators, etc., at low prices. My New Burner, Tandem Thermostat, and Special Heater, will save half the oil, half the time, and cost of operation. Fit any Incubator or Brooder. More than 25,000 have built their own Incubators and Brooders with my plans and fixtures. Not a single failure. My New LAMPLESS BROODER costs you only $4. I will send you my complete plans and catalog, prepaid, for only 25 cents to cover cost. Worth Dollars to you.
H. M. SHEER, 464 HAMPSHIRE STREET, QUINCY, ILL

FREE REX FAMOUS COMPLEXION POWDER
THE KING OF ALL BEAUTIFYING POWDERS
It is absorbent and non-irritating, and may be used where other powders are impossible. It will enhance the beauty of the most perfect complexion and render less apparent the defects of the poorest. It is endorsed by the leading professional and society people, and we guarantee every package to give perfect satisfaction. To further introduce this wonderful powder we make this special offer to you. Send us the names and addresses of ten ladies and 10c. in money or stamps to cover charges, and we will send you prepaid a sample package of Rex Complexion Powder, a sample jar of Rex Scientific Beauty Cream, and our handsome illustrated Beauty Book. This handsome book is 32 pages and cover, and complete in detail; telling you how to preserve your beauty and create new charms. Rex Scientific Beauty Cream is without a peer, we positively guarantee that it contains nothing that will produce or encourage the growth of hair or down on the face. It has more body and is a better working cream than any other cream manufactured, and will not turn rancid. By dealing with us you are guaranteed satisfaction; we will promptly return purchase price if any of our articles are not perfectly satisfactory to the user. Address
REX BEAUTY SPECIALISTS, Dept. C
290 E. 43d St., Chicago, Ill.

Peonies and Irises True to Name!
Buy of a specialist, who grows and knows the stock he sells. I have been specializing in hardy flowers for over eight years, but only a few months ago issued my first catalogue. My offerings comprise over 250,000 Iris and Peonies in about 1,000 varieties. SEND FOR MY CATALOGUE of Peonies, Irises, Phloxes and Hardy Plant Specialties. Pronounced by experts the most complete in America. Contains information of great value to all who love hardy flowers. Free on application.
BERTRAND H. FARR, WYOMISSING NURSERIES
809E Penn Street, Reading, Pa.

American Homes and Gardens *and* **Scientific American**
To one address **$5** per year Regularly $6

plants grow, having set them four feet apart each way. You will never get too many tomatoes for family use—especially if you know how to make them into soups, as every householder should. The plum tomatoes, yellow and red, are exceedingly valuable for preserves. This preserve can be made very rich, and then canned as tightly as possible for winter use.

Turnips I could easily omit, only that they are so useful as a second crop. Say what we will of the improvement in this vegetable, it is not often that we get them sweet and rich for the table. The White Milan, the Golden Ball, and the Munich have a good reputation, but they must grow quick and conditions be about right in the way of rains, or the quality is deteriorated. If you have a cow you can make use of those that are not acceptable on the table. I have at last left out of my garden planting the parsnip, because with most people it is indigestible, and then it needs a lot of weeding. It has the advantage, however, of staying in the ground till wanted, and if necessary all winter. Salsify, or vegetable oyster, is another plant of considerable value, especially for soups, but it has made me too much work as compared with the results. It should be sown early in the spring, in light rich soil, and should be carefully cultivated. The roots are used in October, or they are left in the ground to be dug at any time when wanted. This root really deserves to be called the vegetable oyster, although the cook has something to do with that. Cook in a few pinches of codfish, and you get the oyster flavor.

A few good things for the garden, that are seldom grown, are Swiss Chard—a plant in the beet family, that gives stalks almost as large as the pie plant, but no edible roots. These plants will grow and give you cuttings for two or three years. In the Southern States collards are called for greatly, and they really constitute a fine food from the cabbage family.

Watercress should be grown if you have a running stream anywhere. The cauliflower is so delicious that I would grow a few, if willing to stand the extra labor. The best sort that I have tried is the Burpee's Dry Weather. It is grown almost in the same way as the cabbage, but it must have good rich soil, and cool moist weather, with thorough cultivation.

For my own use I want some of the improved carrots and beets every time, and all summer. I hate weeding, and I know that everybody else does. I will not set a boy at it, beyond the demands of a "just enough carrots and beets for table use." Neither of these vegetables are of much use when thoroughly ripened for winter; but a growing carrot, if nicely cooked, is about as good as an Early Rose potato or a State of Maine. What is more, it is one of the most wholesome of vegetables. Everybody knows what young beets can be, and I am afraid that many know how poor such things can be. Both of these vegetables must grow rapidly, in loose soil. Select the Danvers or the Chantenay for carrots, and for beets you will do well enough with Eclipse and Egyptian.

Now for a side issue be sure to have a good sized asparagus bed, and a bed of pieplant; both of them near enough to the barn to take the drainage, if possible; if not, make sure the soil is very rich and deep and clean. Never put on any seedy manure; for that matter, never put it onto your garden anywhere. The best asparagus, by all means, is the Improved Argenteuil. This is sometimes called the Early Giant. I have grown this sort two or three times as large and fine as any other that I have experimented with. It is time now to throw out the older sorts entirely. Rightly grown asparagus will give you shoots six or eight inches long, and every bit of them tender. In fact, I do not know how the tough stems

(*Continued on page xx*)

SECRETARY of War Stanton sat in his office in Washington.

"If I ring that bell," he said, "any man, *in the most distant State*, is a prisoner of war!"

The telephone bell has succeeded the messenger bell.

Business has succeeded war.

If *any man* in the Union rings the bell of his Bell Telephone at his desk, any other man *at the most distant point* is at his instant command.

That is the Bell Companies' ideal—that you may take the receiver off the hook and get into communication with *any man*, even in the most distant State.

That is the really *universal telephone* that the Bell Companies set as their goal at the beginning. It is so far realized that already 20,000,000 voices are at the other end of the line, all reached by the one Bell system.

The *increased efficiency* of the individual, of the lawyer or bank president or corporation official; the increased efficiency of the *nation as a whole*, because of the development of the Bell system, can hardly be estimated.

It certainly *cannot* be overestimated.

The president of a corporation to-day could not be the president of such a corporation without it.

The modern corporation *itself* could not exist without telephone service of national scope.

Corporation officials could not have transacted business quickly enough by old methods to reach the totals which alone are accountable for our remarkable commercial development as a nation.

The wheels of commerce have been kept at the necessary speed to provide this swift development by the universal telephone.

The mere item of *time actually saved* by those who use the telephone means an *immense increase* in the production of the nation's wealth every working day in the year.

Without counting the convenience, without counting this wonderful increased efficiency, but just counting *the time alone*, over *$3,000,000* a day is saved by the users of the telephone!

Which means *adding $3,000,000 a day to the nation's wealth!*

The exchange connections of the associated Bell Companies are about 18,000,000 a day—the toll connections half a million more. Half of the connections are on business matters that must have prompt action—either a messenger or a personal visit.

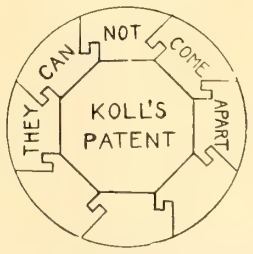
Figured on the most conservative basis, the money value of the *time saved* is not less than ten cents on every exchange connection and three dollars on every toll, or long distance connection—figures that experience has shown to be extremely low.

The saving *in time only* is thus $1,800,000 daily on exchange messages and $1,500,000 on long distance messages—this much added to the nation's productiveness by the Implement of the Nation, the Bell Telephone.

American Telephone & Telegraph Company

KOLL'S PATENT LOCK-JOINT COLUMNS

The Best for Pergolas, Porches or Interior Use are made exclusively by



HARTMANN-SANDERS COMPANY

Elston and Webster Avenues
CHICAGO, ILL.
Eastern Office, 1123 Broadway
NEW YORK

Send for Catalogue A-19 of Columns, or A-29 of Sun-dials, Pedestals, etc. (See also "Sweet's Index.")

ATLAS PORTLAND CEMENT

In building a home in the city or country, ask yourself first

WHAT MATERIAL?

INVESTIGATE wood, brick and stone. Set down the advantages and disadvantages of each, but do not, for your own interest, forget to investigate

CONCRETE

Definition: Concrete is a mixture of broken stone or gravel, sand and some form of Portland Cement.

The success of concrete construction depends upon the quality of the cement.

"PORTLAND means a kind of cement. It does not mean quality. "Atlas" does. Atlas Portland Cement, made in but one grade; a name to remember; a brand to insist upon. It has purity and uniformity, two qualities that are absolutely essential and which produce results obtainable from few Portland cements. Whether you live in the city or country, whether you live on a farm or a country estate, the importance of concrete to you and, therefore, the importance of Atlas Portland Cement cannot be over-estimated.

We have a book that should be in the hands of everyone who owns a home, large or small, or who expects to build one. The name of this is "Concrete Construction about the Home and on the Farm." It will be sent to anyone on receipt of 4 cents to pay delivery charges. Write for it today. Investigate before you begin to build or rebuild. You have no idea of the number of things you can do with concrete made from pure Atlas Portland Cement until you have read this book. A large book on Concrete Country Residences, with many designs and floor plans of houses made with concrete, sent for 25 cents.

TRADE MARK

THE ATLAS PORTLAND CEMENT CO. PORTLAND ATLAS CEMENT 30 BROAD ST. NEW YORK

NONE JUST AS GOOD

THE ATLAS PORTLAND CEMENT COMPANY Dept.10 30 Broad Street, New York

AMERICAN HOMES AND GARDENS

Price, 25 Cents. $3.00 a Year

CONTENTS FOR MARCH, 1909

PAGE

"Gellian Court": The Casino and Pergola Inclosing the Garden 82

Monthly Comment—What Are You Going to do About It? 84

Notable American Homes—The Country Seat of Emil Berolzheimer, Esq., Tarrytown, New York ..... *By Barr Ferree* 85

Roses for Winter ..... *By Edith B. Welsh* 93

Homes of American Artists—An Artist's Home in Rose Valley ..... *By Ralph de Martin* 95

The Roadway and the Grounds ..... *By John Carey Edwards* 99

Giant Leaves ..... *By S. Leonard Bastin* 103

The Compost Heap ..... *By Ida D. Bennett* 106

The Residence of Friend A. Russ, Esq., "Rock Ridge," Greenwich, Connecticut. *By Francis Durando Nichols* 107

New Developments in Stenciling ..... *By Mabel Tuke Priestman* 110

Residence of Prof. L. W. Reid, at Merion, Pennsylvania 112

A "Triple-Gable" House at Oak Lane, Pennsylvania 113

A French Model Dairy ..... *By Jacques Boyer* 114

The Colonial Residence of J. Randall Williams, Esq., Haverford, Pennsylvania. *By Paul Thurston* 117

Correspondence:

Problems in Home Furnishing ..... *By Alice M. Kellogg* xii

Garden Work About the Home ..... *By Charles Downing Lay* xii

Making of a Country Home: II. The Vegetable Garden.

New Books.

Combined Rate for "American Homes and Gardens" and "Scientific American," $5.00 per year
Rate of Subscription of "American Homes and Gardens" to foreign countries, $4.00 a year
Rate of Subscription of "American Homes and Gardens" to Canada, $3.50 a year

Published Monthly by Munn & Company, Office of the "Scientific American," 361 Broadway, New York

CHARLES ALLEN MUNN, President - - - - FREDERICK CONVERSE BEACH, Secretary and Treasurer
361 Broadway, New York 361 Broadway, New York

[Copyright, 1909, by Munn & Company. Registered in U. S. Patent Office. Entered as second-class matter, June 15, 1905, at the Post Office at New York, N. Y., under the Act of Congress of March 3, 1879]

NOTICE TO CONTRIBUTORS—The Editor will be pleased to have contributions submitted, especially when illustrated by good photographs; but he cannot hold himself responsible for manuscripts and photographs. Stamps should in all cases be inclosed for postage if the writers desire the return of their copy.

"Gellian Court": the casino and pergola inclosing the garden

AMERICAN HOMES AND GARDENS

Volume VI March, 1909 Number 3

"Gellian Court": the piazza overlooking the terrace has true classic character

Monthly Comment

What Are You Going to Do About It?

VERY presently the entire country side everywhere will be alive with people, hunting in couples, in threes, in whole families, personally or with trusted friends, hunting, hunting for that most desirable of human possessions, a home! The expeditions set out at all hours and extend in every direction. The most likely as well as the most unlikely places are searched, scanned, examined and investigated. The literatures of the real estate owners and home promoters are studied with avidity, and many anxious days consumed in testing the realities of the descriptions by personal examinations of the alleged sites of future happiness and well being. The more fortunate set out on their travels in automobiles; some pursue their journeys in wagons, often of an archaic style; others still make their researches afoot and often have a most uncomfortable time in doing so. The annual hegira to the country is about to begin, and those whose lives have been stiffled for years in the cities are about to seek a free quota of the air to be inhaled for the rest of their lives.

IT is curious that this annual upheaval should be quite distinctly a sign of spring. The country is not at its best in March; on the contrary, it is decidedly at its worst. The whole winter, with its devastating effects, is behind, and the healing touch of warmth and sunshine has not yet made itself felt. Presently the new season will open up, and when the spring has fairly opened, there is no region so enchanting as the countryside, with its fields springing into green, its budding trees, its early flowers, its new unfolding life, at once so mysterious and so stimulating! It is the finest part of the year, the most charming and most delightful, and to those who first see the country at this period of the year it must appear as a region of unnumbered joys, of gentle peace and quietude, a place, in short, not only to relax one's tired nerves in, but the place of all places in which to live.

AND this is perfectly true. There is no place like the country, no region that offers so much and provides so bounteously. But no pleasure needs to be approached with greater care. It is a well recognized fact that in the temperate zone, and especially in the northerly latitudes, the year is divided into four seasons. The gentle winds of spring pass into the torrid heat of midsummer that, in its turn, gives way to a brilliantly illuminated fall. For each of these periods the country offers activenesses that the most agreeable of cities can not, for a moment, compete with. Then comes the death of the year we know as winter. The almanacs may divide the twelve months into four equal parts of three each, but be assured that if, by good luck, the winter keeps to its own particular three, they are very apt to seem as long as any other five or six months one ever lived through or had acquaintance with. Yet if one is to live in the country for the entire year—as many people must do—these winter months are the real test of the joy of country life and the true criterion by which its success must be measured.

THE promoters of the sale of country real estate are interested solely in the question of sales. Their literature, to be true, is eloquent as to the value of country life and homes, but these are purely academic questions with these good folk, whose entire interest in life—at the moment—is to sell land, exactly as other people devote themselves to the sale of dress goods, or the distribution of imitation jewelry—for a price. These excellent dealers are fully alive to the drawbacks of a winter in the country, and have a hibernating period of their own, like the bears, bees, squirrels and other animals of like habit. But the spring they have appropriated to themselves, and their invitations to the countryside are never so alluring as at this season. It is good business, no doubt, but those who buy in the spring, and have never passed a winter in the country, are not actually alive to what is before them, nor are they aware of the discomforts that even in the most agreeable of country regions is bound to beset them. If one has had no experience with country life, it will be found to be a good thing to pass a few days or a week in a rural region before deciding that one is fitted for this mode of existence.

THE country offers so much that one is embarrassed by the multitude of openings and activities it seems to present. Quite a number of most excellently disposed persons have written books telling what an ingenious person may accomplish in the country, how little he can live for, how self-supporting he may make his place, how idealistic is this style of life. No doubt these things are true, for they are carefully set down in handsomely printed books published by reputable houses. Yet nothing could be more delusive or ensnaring than much of this literature. Every form of country industry is attended with expense, anxieties and the likelihood of failure. The seeds you plant may germinate and start, and all sorts of catastrophies intervene before the culminating period, when there may be nothing worth culminating. Your chickens will gorge themselves with food that you must pay for, and then suddenly cease to lay, or contract a disease that will run through the whole flock. As for the larger animals the perils they are subject to are so disheartening that it is best not to think of them. Even the care of a lawn involves labor, and the simplest of flowers will not bloom without planting and care.

IT is true enough that many people will make a living on an acre of ground or even less; it is true that comfort and luxury can often be accumulated in the country and directly from the soil. But it is the hardest possible kind of work. It means unremitting care, constant attention, an early getting out of bed and an exhausted body that seeks repose with work half done, and more to do to-morrow than has been accomplished to-day. Moreover, it does not follow that because one man has made a success of country living that all men can do so, or most men. Do not some achieve colossal fortunes in the stock market or in the manufacture of steel? Yet these are the exceptions and not the rule, and the average man has as many chances of failure in these brilliant fields as has his more humble prototype in the countryside.

WHAT, then, are you going to do about it? It is a problem quite terrible in its complexity and beset with all sorts of dangers and difficulties. There is but one single word of general advice that can be given, and that is to go slowly. The establishment of a country home is not a lottery in which one may take a chance and perhaps survive disaster. The disaster, when it comes—if it does come—is apt to be serious and disheartening. It is always possible to buy country real estate; it is a very different matter to sell it. One may move out into the country, but it is not so easy to return. One may enjoy the spring, the summer and the fall, but the winter may freeze the very marrow in one's bones, and entail discomforts, expenses and sicknesses that, in the warmly glowing days of the springtime, were not only never thought of, but seemed utterly impossible and irreducibly remote.

Notable American Homes

By Barr Ferree

"Gellian Court:" the Country Seat of Emil Berolzheimer, Esq., Tarrytown, New York

"GELLIAN COURT" occupies the comparatively modest area of about twenty acres among the hills of Tarrytown-on-the-Hudson, a beautiful village so close to the city of New York as to be almost literally a metropolitan suburb. It is a place of rare charm, a site beautiful in itself, treated and developed in a highly interesting manner. Much of the original growth of trees has been cleared away and the land newly planted with fruit trees and many plants and shrubs. Here and there a few fine old trees still remain, chiefly elms and chestnuts, while the remoter parts are heavily wooded with the mixed growth which is characteristic of the highlands of the Hudson.

The grounds are inclosed within a high wall, near one end of which is the entrance to the serpentine drive by which the house is reached. The mansion is close to the southern edge of the property, scarce more than two hundred feet from the roadway. The site on which it stands is by no means the highest within the estate, but it is sufficiently high to permit of good drainage in every direction. The entrance driveway passes beneath the porte cochère and is thence continued to the stable beyond the house.

The mansion is built of local granite from an old quarry, and is a stone that easily lends itself to the Italian style in which this building was designed by its architects, Messrs. Janes & Leo, of New York. The roofs of Spanish tiles constitute an integral part in the color scheme of the exterior.

Entering the house from beneath the porte cochère admission is gained to the entrance hall through a vestibule. This hall is a stately and dignified apartment, octagonal in plan and surmounted with a domed ceiling. The mosaic floor has a patterned border and the walls are in imitation Caen stone. The architectural treatment is simple but expressive. A somewhat severe cornice is upheld by Roman Doric columns that are engaged in the corners of the octagon. A marble bench stands before the domed niche, and a Roman table, likewise of marble, occupies the center of the room. The electric lights are hidden behind the cornice at the base of the dome and form a highly effective method of lighting.

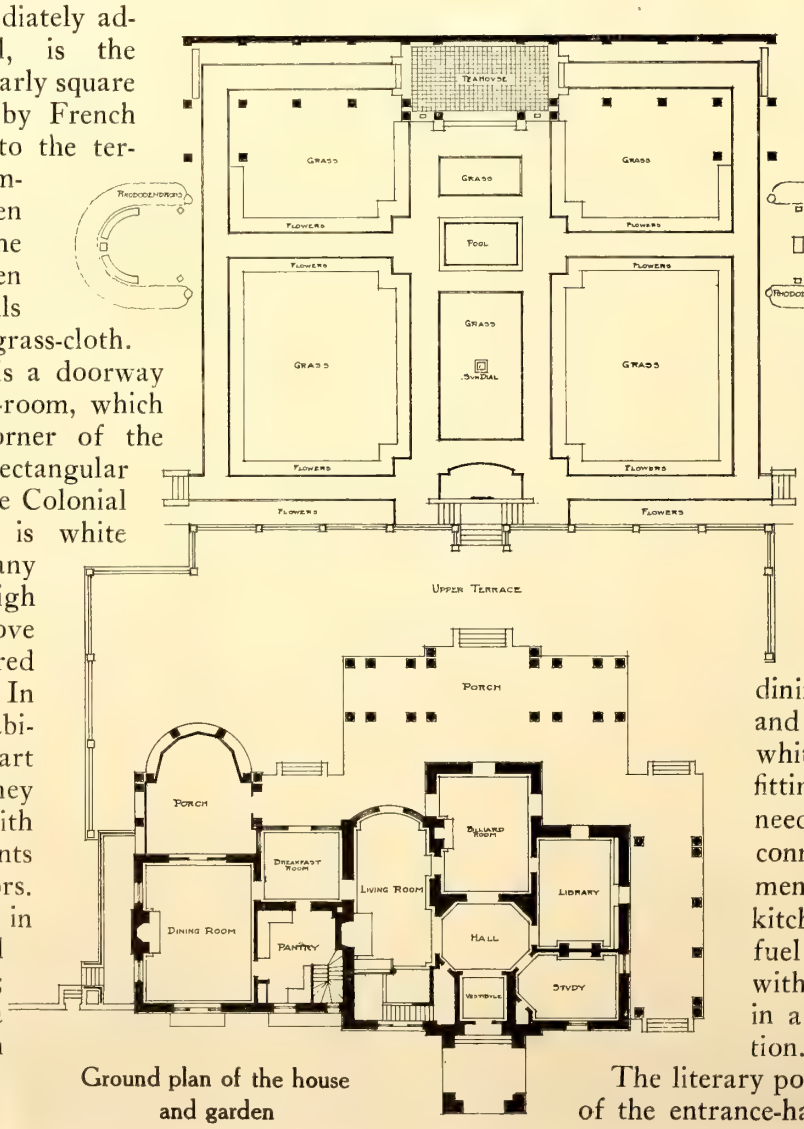
To the left is the living-hall, one end of which is filled with the main staircase. The lower part of the walls, to about the height of seven feet, have a paneled wainscoting painted with white enamel, with which all of the woodwork of this room is treated. Above the wainscot the walls are covered with yellow brocaded silk. The ceiling is beamed, and, like the woodwork, is white. The fireplace has facings and hearth of buff brick and an overmantel of Caen stone. The stairway, which is completely open to the hall, is built with broad landings and has white enameled balusters and treads and a mahogany rail. The floor is of hard wood, on the center of which is laid a great rug. The color scheme is extraordinarily bright and cheerful, as necessarily follows from the combination of white and yellow, the prevailing colors of the apartment.

A shady resting place beneath the trees

The garden front and terrace

Further on, but immediately adjoining the living-hall, is the breakfast-room. It is nearly square in plan, and is lighted by French windows that open on to the terrace, which extends completely across the garden front of the house. The woodwork is painted green and white, and the walls are covered with green grass-cloth.

On the furthest side is a doorway that leads to the dining-room, which occupies the further corner of the house, and is a spacious rectangular apartment designed in the Colonial style. The woodwork is white enamel, with mahogany doors. There is a high paneled wainscoting, above which the walls are covered with blue striped paper. In the corners are china cabinets, which constitute a part of the wainscoting; they are cleverly arranged with broken curved pediments and latticed glazed doors. The ceiling is beamed in squares, and is supported by a substantial cornice; from the central panel a chandelier of Bohemian glass is suspended. The fireplace has facings of Siena marble with an elaborately paneled overmantel. The furniture is mahogany. The end of the room overlooking the garden is almost completely filled with windows; in the center are great glazed doors, opening to a spacious piazza that is provided with a great rounded end. This, plentifully supplied with tables and chairs, decorated with luxuriantly growing ferns and plants, and protected by awnings, is used as an outdoor dining-room in pleasant weather.



Ground plan of the house and garden

The pantry, in itself a room of some size, occupies the space behind the breakfast-room, and, of course, connects with the dining-room. It is painted with white and green enamel, and has a floor of white and green rubber tiling. Its fittings are entirely adequate to every need. A stairway and dumbwaiter connect directly with the basement below, which contains the kitchen, laundry, heating apparatus, fuel rooms and cold storage, together with all the minor offices necessary in a mansion of this size and description.

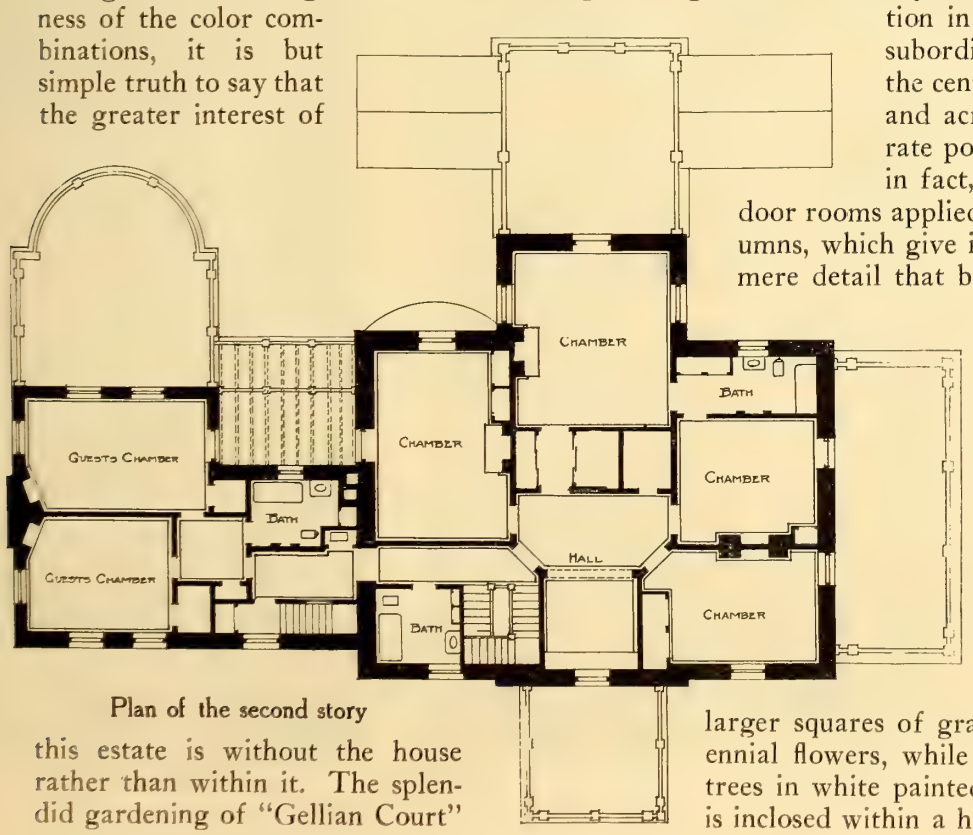
The literary portions of the house are on the right of the entrance-hall, and fill the whole of that side.

Here are two rooms, the study, on the entrance front, and the library, which overlooks the garden. The study is trimmed with hazel, with a high paneled wainscoting and terra cotta walls above. There are built-in bookcases and a fireplace with facings and hearth of brown glazed tile. The library is is designed in the Elizabethan style, and is finished in weathered oak. Like the other rooms, it has a high paneled wainscoting, and above the walls are covered with green velour. The fireplace has Caen stone facings.

The billiard-room occupies the center of the house. It is trimmed with oak, finished in the Flemish style. It has a high batten wainscoting. At one end is a long seat, reaching from wall to wall, and elevated a step above the level of the main floor. Above it is a massive hooded frieze supported on corbel brackets. On one side of the room is a combination cabinet used for locker and ball rack, with glass cabinets overhead. On the opposite side is the fireplace, with facings of Moravian tile, a Dutch hood and mantel.

The entrance front and porte cochère of stone

Interesting as it is to view the fine interior of this house, to pass from room to room, to note the convenience of the arrangements, the elegance of the furnishings, the agreeableness of the color combinations, it is but simple truth to say that the greater interest of this estate is without the house rather than within it. The splendid gardening of "Gellian Court" can well be described by the single word sumptuous. And the house within is not sumptuous, nor does its exterior design suggest such a term; it is comfort and convenience, good taste and careful selection that distinguishes the interior. But without there is a sumptuous growth and blooming, arranged, included and inclosed within an entirely adequate architectural setting and frame.



Plan of the second story

The ground plan of the house suggests a somewhat irregular structure; as a matter of fact, it is a singularly orderly and symmetrical building, consisting of a main portion in three stories, to one side of which is attached a subordinate wing of two stories. On the garden front the center of the main building is well projected forward, and across the whole of this front is a broad and elaborate porch which is continued around on one side. It is, in fact, more than a mere porch, but a real series of outdoor rooms applied to the whole of the front and supported by columns, which give it a true classic character. It is, perhaps, but a mere detail that both floor and roof are of red tile, but this, as has already been pointed out, is an effective part of the color scheme of the exterior. Below the great garden porch is a terrace, a spacious stretch of glass inclosed with a balustrade, open in the center with a quite monumental-like treatment of steps by which the garden is reached.

The garden is a vast rectangular space, with a processional walk in the midst, whose center is occupied beds of grass: in the first a mammoth flower bed; in the second a sundial; in the third a pool with water lilies and other aquatic plants. On either side are larger squares of grass, whose borders are richly planted with perennial flowers, while at stated intervals on the central paths are bay trees in white painted tubs and boxes. At the further end the garden is inclosed within a high stone wall which abuts against the roadway.

The stately and dignified octagonal hall is surmounted with a dome

In the center, and close against it, is the casino, or teahouse from either side of which extends a pergola, which, in its turn, is returned at the ends, thus forming an admirable and exceedingly effective boundary to the garden. The floor of the casino is laid with red brick in herring-bone fashion, inclosed within a granite coping. The roof is of Spanish tile, supported on Ionic columns, which are repeated in the pergolas. The furnishings are in keeping with the classic character of the whole design, and consist of a splendid Roman table and two Hermes standing between the side columns. On the sides of the garden are two semicircular niches or retreats. In the center of each is a marble statue, with white painted settles on either side, the space being surrounded with rhododendrons, above which rise a thick growth of trees. Quiet resting places these, from which the beauty of the garden may be enjoyed.

But the interest of "Gellian Court" is not exhausted with the garden. The stable is partly hidden from view by the great pines with which it is surrounded. It is built of stucco and is reached through a court inclosed with a stucco wall. On the right of the carriage forecourt is the carriage

The pergola has a rich architectural effect

The cas

shed. Beyond is the spacious carriage house, behind which, and connected with it, is the stable, both departments being amply fitted with the best of modern devices. A large court beyond is partly inclosed on two sides by various farm buildings: wagon barn, sheep shed, wood shed, tool house and chicken houses. Continuing further up the hill from the stable one passes the gardener's cottage and the mammoth conservatories. A little further on is the ice-house, half concealed underground, and still beyond is a rustic summer house built over a well of pure water.

The main stairway occupies one end of the living hall

At the very apex of the estate is a casino, a quaint stucco building, with pergola-like porches on either side. Within is a single large room, with a fireplace in an inglenook, on one side of which is a toilet-room, and on the other a pantry. The building is entirely inclosed with French windows, so that when opened the main room and the piazzas constitute a single apartment.

The climb to this delightful spot, if indeed the exertion calls for so exhausting a word, is well worth the effort. The view, as is the case with all views from the highlands of the Hudson, is alike majestic and enchanting. To the east are

or teahouse

The pergola and its flower beds

The stately and dignified octagonal hall is surmounted with a dome

exceedingly effective boundary to the garden. The floor of the casino is laid with red brick in herring-bone fashion, inclosed within a granite coping. The roof is of Spanish tile, supported on Ionic columns, which are repeated in the pergolas. The furnishings are in keeping with the classic character of the whole design, and consist of a splendid Roman table and two Hermes standing between the side columns. On the sides of the garden are two semicircular niches or retreats. In the center of each is a marble statue, with white painted settles on either side, the space being surrounded with rhododendrons, above which rise a thick growth of trees. Quiet resting places these, from which the beauty of the garden may be enjoyed.

But the interest of "Gellian Court" is not exhausted with the garden. The stable is partly hidden from view by the great pines with which it is surrounded. It is built of stucco and is reached through a court inclosed with a stucco wall. On the right of the carriage forecourt is the carriage shed. Beyond is the spacious carriage house, behind which, and connected with it, is the stable, both departments being amply fitted with the best of modern devices. A large court beyond is partly inclosed on two sides by various farm buildings: wagon barn, sheep shed, wood shed, tool house and chicken houses. Continuing further up the hill from the stable one passes the gardener's cottage and the mammoth conservatories. A little further on is the ice-house, half concealed underground, and still beyond is a rustic summer house built over a well of pure water.

At the very apex of the estate is a casino, a quaint stucco building, with pergola-like porches on either side. Within is a single large room, with a fireplace in an inglenook, on one side of which is a toilet-room, and on the other a pantry. The building is entirely inclosed with French windows, so that when opened the main room and the piazzas constitute a single apartment.

The climb to this delightful spot, if indeed the exertion calls for so exhausting a word, is well worth the effort. The view, as is the case with all views from the highlands of the Hudson, is alike majestic and enchanting. To the east are

In the center, and close against it, is the casino, or teahouse from either side of which extends a pergola, which, in its turn, is returned at the ends, thus forming an admirable and

The main stairway occupies one end of the living hall

The pergola has a rich architectural effect

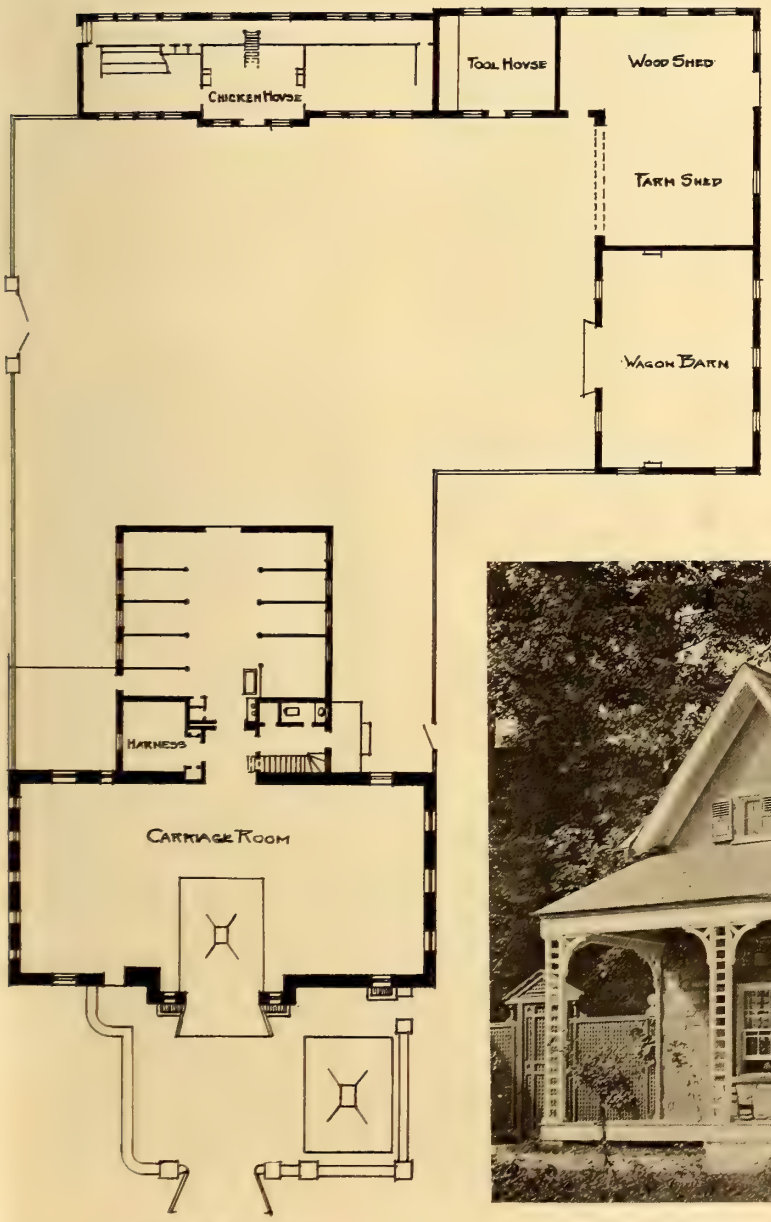
The casino or teahouse

The pergola and its flower beds

White woodwork and blue and white walls constitute the colors of the dining-room

The billiard room is trimmed with oak and is Flemish in design

The dining-room is Colonial in treatment

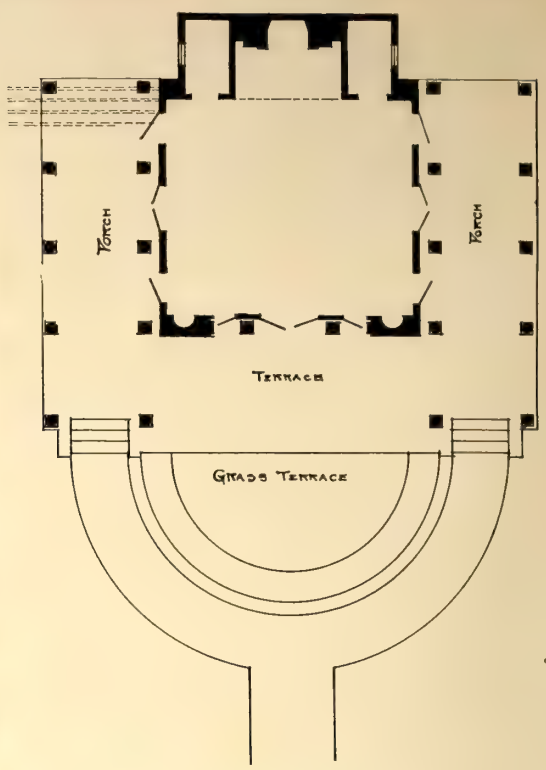


Plan of the stable

The stable and its forecourt

The gardener's cottage on the estate

The casino and its approach



Plan of the casino

Icehouse and rustic summer house

finds, of course, precisely what one expects. The unexpected matters here comprise the estate itself, its fine house, its spacious stabling and conservatories, and its splendid garden. All these are assembled in orderly array and situated so as to yield the utmost of convenience and, at the same time, take the fullest advantage of the beautiful site selected for this house.

The conservatories

the woods, to the north are the Hudson highlands, and to the west and south is the splendid Hudson River silently pursuing its journey to the sea. Above its shining surface on the farther side rise the rocky shores of two states, New York and New Jersey, here presenting a somewhat formidable, yet wonderfully fascinating, front to the observer who views them from the east.

One looks for just this outlook here, and one

Roses for Winter

By Edith B. Welsh

Pasting up the air tight tin box

ONE of the sadnesses of the summer garden is the fact that its beauties last for such a short while. Too soon the winter comes, when we may search in vain for the gay blossoms which held up their head so brightly to the warmer sun. But with a little care it is possible to preserve at any rate one of the most valued of our flowers, and in this way retain some of the loveliness of the border for the dull months. In this article a special method of treatment is indicated whereby roses may be dried, and, when required, brought back to a fair resemblance of their original beauty.

The best time to set about this method of preserving roses is in the fall, when, owing to the cool weather, the flowers develop more slowly and are thus in every way better. Almost any of the larger kinds will answer the purpose well, and the blossoms should be gathered when in bud, just after the petals are mature and yet before they have started to unroll. Care should be taken to see that the buds are quite dry, and if they should have any moisture on them it is well to spread them out for a day or so in order that the dampness may pass away. As many roses as possible should be secured in order to make allowance for a certain number of failures; it is not to be expected that all will be entirely successful.

With all the buds to be preserved gathered together, the next step in the treatment may be taken up. Procure the lid of a tin can and round this twist a piece of wire in such a way that it can be held like a small pan. Now into the receptacle place a few lumps of candle wax; then holding the lid over a lighted candle. Take each rose bud and dip the end of the stalk in the melted wax, repeating the process several times so that a small lump of the substance is formed on the end of the stem. Next, very carefully tie a small piece of silk twine round each of the buds—just tightly enough to keep in place without in any way injuring the petals.

The next thing required will be one or more tin boxes. It is not recommended that these should be very large, those answering the purpose perhaps best of all being the small long-shaped biscuit boxes. The lids of these, as a rule, fit exceptionally well, and this is rather an important feature. Take some tissue paper and cut this into pieces each one of a size to accommodate a single rose bud. Wrap the flower head of each specimen in the paper, tying it securely at either end with silk. It may be as well here, perhaps, to insist again on the importance of each rose being absolutely free from any surface moisture, one example in a damp condition placed in a box being sufficient to spoil the whole of the contents. When the roses are wrapped up they may be packed away in the boxes, each of which has been previously lined with wadding. The buds may be put in fairly closely, as long as they are not really crushed when the lid is put on. In order to make the box doubly air tight it is well to paste thin strips of paper round the joints of the lid. All the boxes as they are loaded with buds should be placed in a closet; it is important that the temperature should be well maintained, although the boxes must not be put in a really hot place.

Wrap each bud up in thin paper

The roses may now be left just as they are for a period of two or three months; longer than this it is scarcely advisable to leave the buds. When it is decided to revive the sleeping ing flowers the boxes may be opened and the buds taken out one by one. Extreme care must now be exercised in the handling of the specimens, as they will be in a very brittle state, and it is very easy to damage them in this condition. Gently unwrap each bud, and with a small pair of scissors cut away the silken bands which encircle the petals. Next take a basin full of hot—not boiling—water. Now take each bud

and with a stout pair of scissors make a clean cut through the stalk a fraction of an inch above the sealed end. As soon as this has been carried out the stalk should be immediately immersed in the basin of hot water, each specimen being allowed to remain in the liquid for five minutes. Now prepare a large bowl full of clean fresh water into which has been cast a small handful of common salt. Into this all the roses may be placed as soon as they have been treated with the hot water, care being taken to see that only the stalks are in the fluid. Now convey the whole thing to a perfectly dark and rather warm cupboard, where the awakening flower should be allowed to stay for several hours. At the end of this time, if the experiment has been carried through on the proper lines, it will be observed that the roses are beginning to take on much of their former loveliness, and in a short while they will develop into much of their original beauty.

Sealing the bud stems with liquid wax

Taking the buds out in winter

Of course, a proportion are bound to be failures, no matter how carefully the roses may have been selected in the first instance. Still with moderate success the worker will feel amply repaid for any trouble taken on account of the value which roses assume in the depths of winter. The treatment might be employed at any time of the year, when roses were available for the purpose.

Like many household arts this simple experiment should not be undertaken without a very ample preparedness for failure. I have already pointed this out more than once, and while I do not wish to discourage those who may be interested enough in this process to undertake it, it is but fair that a further word of caution should be added.

One should not, however, be altogether deterred from the possibility of failure from making the attempt. The process is simple enough, and calls for no complexity of apparatus. Nor, indeed, need one go beyond the resources of the ordinary household for the necessary materials. This in itself is one of the charms of the experiment. It is something every one may do and do easily and quite without expense. Moreover, if but a few of the roses survive the period of repose and experimentation, a few only will yield sufficient compensation, not only through the novelty of their unusual blooming, but through the sense of satisfaction that one will feel that so simple and so beautiful an experiment should have yielded some result.

Perhaps it is a difficult thing to have too many roses in summer; one fairly longs and yearns for the blooming time to hasten, once it seems about to arrive. But one cannot have this royal flower in the winter season without great expense, and then not always in a satisfactory way. The plan here outlined offers delightful opportunities of rose-enjoyment at a time of year when roses are not only scarce, but are positively unknown in the ordinary house. And they will be real roses too, but strangely artificial ones that are sometimes offered to the enjoyment of the rose lover, who, however, knows but the real flower, and can have no patience with the most skilful imitation.

The living wing of the house and studio

Homes of American Artists

An Artist's Home in Rose Valley

By Ralph de Martin

THERE is a very great and widespread interest in the dwelling places of artists, due in part, no doubt, to the popular impression that these children of genius must know exactly how to build and furnish, but possibly behind this there is the little understood, but nevertheless notable, fact that of all our contemporaries the artist is alone likely to achieve immortality, since the artist alone is likely to have his work handed down to the admiration of posterity. Meanwhile, however, the artist must live, and to live must have a place to live in; and, above all, is especially fortunate if the house be an individual one, either completely individual from its first upbuilding, or transformed and modified and given individual character by its occupant.

The Stephens house in Rose Valley, owned and occupied by Mr. and Mrs. Charles H. Stephens, is the home of two artists, both husband and wife being artists of wide fame. It is both a home and a studio, or rather two studios, both Mr. and Mrs. Stephens having their separate painting rooms. The house as it now stands was actually built and arranged for its present owners by Messrs. Price and McLanahan, architects, of Philadelphia; yet in fact the structure was, in its primitive form, an ancient stone barn, transformed, modified, and made over into studios, while the house part is a wholly new addition built for its present use.

To transform an old house into a new one is very often as difficult a problem as the architect is called upon to handle; the difficulty of such a task is very much heightened when the initial structure is a barn, a building erected primarily for very many uses, but never under any circumstances as a living place for a twentieth century family. The old barn, however, formed an admirable starting point for the present considerable house, since studio requirements are very special, calling for ample space and entailing difficult problems in lighting. In a measure, however, it formed a very natural beginning for the studio portion of the house, and has been so utterly transformed

The pergola

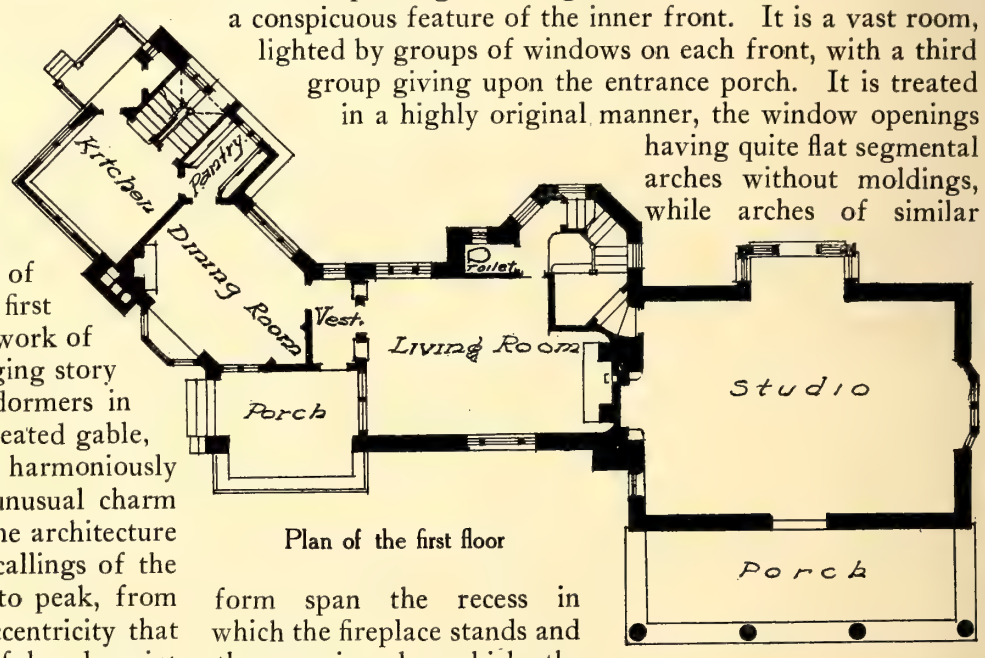
that no hint of its primitive use now remains. On the contrary, its high walls and spacious windows proclaim aloud the fact that studios are within, and in this external expression of a great internal truth one of the most important of architectural canons is set forth in the most direct way possible.

End wall of the studio

Starting as it did with the studio, the dwelling portions may, in a sense, seem an annex to it. As a matter of fact, the dwelling house loses nothing of its individuality by reason of the proximity of the studio. The latter is, indeed, the special reason why this house was built here; but the importance, the cardinal importance of the dwelling is not the less marked because of this circumstance. The truth is, the whole building is a most picturesque pile, the dwelling house having a deflected dining and service wing on one end, and the great double studio on the other. The elements here called for picturesque treatment, and this has been availed of by the architects in a very complete manner. A first story of stone, in harmony with the older stonework of the studio, is surmounted by a second overhanging story of stucco. Charming bay windows, quaint dormers in the roof, a massive stone chimney, a plainly treated gable, these and other legitimate architectural devices harmoniously designed and combined give an exterior of unusual charm that proclaims aloud the artistic character of the architecture quite as much as it makes known the artistic callings of the occupants. It is an artist's house from base to peak, from end to end; an artist's house devoid of the eccentricity that sometimes obtains in such dwellings, but beautiful and quaint throughout, thoroughly agreeable to look at and, as we shall immediately see, thoroughly agreeable to live in and work in.

Notwithstanding the apparently irregular shape of the house, its plan offers no difficulties, and is of the simplest. A simple little porch, with wooden steps incased within a stone base, with a lofty stone pier on one side and the house wall on the other, forms the approach to a vestibule or entrance hall, which is actually a passageway between the living-room and the dining-room.

The living-room is on the right, and occupies the whole of the first floor to the studio wing, except for the staircase, which occupies a great octagonal tower-like extension that is a conspicuous feature of the inner front. It is a vast room, lighted by groups of windows on each front, with a third group giving upon the entrance porch. It is treated in a highly original manner, the window openings having quite flat segmental arches without moldings, while arches of similar



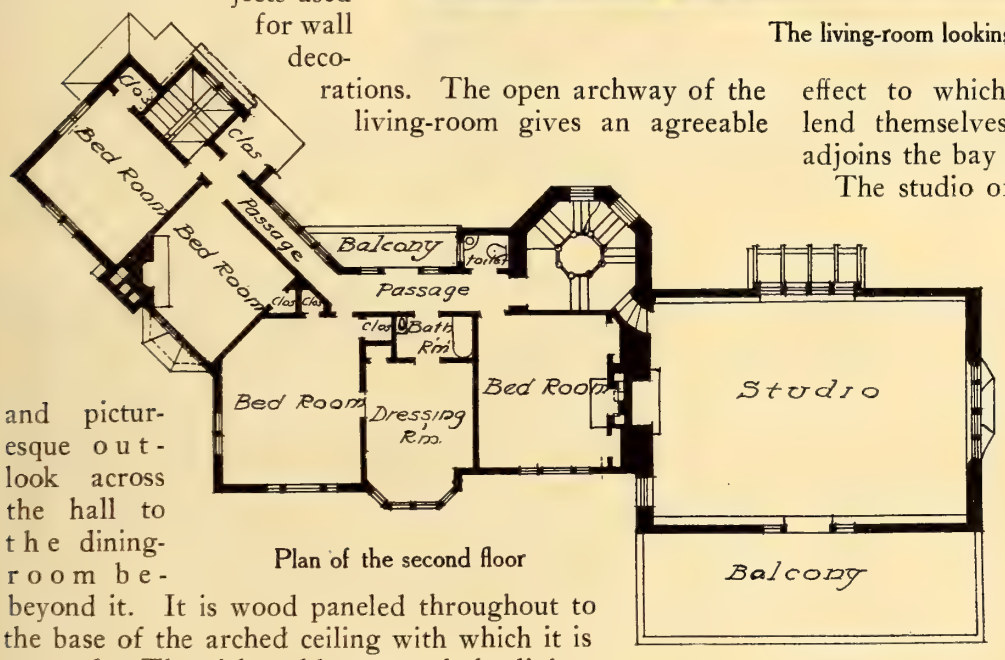
Plan of the first floor

form span the recess in which the fireplace stands and the opening by which the room is entered. Of entrance doorway there is none at all, the opening archway from the hallway being supported by

A picturesque group of studio and dwelling

two columns of stained wood, a low wall filling in the lower space on either side, while the central space forms the entrance. The wood trim is limited to a narrow base mold and shelf rail that runs completely around the room, serving as capitals for the entrance columns. Undoubtedly the striking feature of this room is its wall covering of figured Japanese paper; the ceiling is covered with a plain tint paper with sufficient yellow to harmonize with the gold of the walls. This striking and unusual wall covering forms a rich background for the Japanese prints and other objects used for wall decorations. The open archway of the living-room gives an agreeable

The living-room looking toward the fireplace



Plan of the second floor

and picturesque outlook across the hall to the dining-room beyond it. It is wood paneled throughout to the base of the arched ceiling with which it is covered. The rich gold paper of the living-room is used for the ceiling here, a splendid crown to a charming room. Old time furniture adds to the quaint effect to which the architectural forms here so readily lend themselves. The fireplace occupies one corner and adjoins the bay window of the entrance front.

The studio of Mrs. Stephens, who is best known by her full name of Mrs. Alice Barber Stephens, is entered by a short stairway that adjoins the main stairway. It is a vast room with a beamed ceiling, and a fireplace under an arch built in the entrance wall. Each of the remaining three sides is lit with windows, one of which gives upon the great stone porch that is a conspicuous feature of the exterior. The studio of Mr. Stephens is above. The oak beams of the barn roof are still visible, while a veritable flood of light is admitted by three great windows. Contrary to popular belief, there is no mystery in an artist's studio. Space and light —light of the right kind, and preferably from the north—is all that is desired. These are the essential requirements, and such fittings and draperies, such

There is now no hint that an ancient stone barn was the nucleus from which the house was developed

The dining-room is wood-paneled to the arched gold ceiling

sketches and ornaments as individual taste may require, are matters of quite secondary importance. These lesser features are not wanting in the Stephens' studios, yet the satisfaction their skilled owners take in them is surely and chiefly for their workmanly availability. Naturally enough, in this home of artists, they quite dominate everything.

An artist's home is not only a place where artists live, but a home that is artistic in the truest sense. One follows naturally from the other. An artist must be artistic, and the artist's home must, therefore, represent the artistic temperament in every aspect. This means household taste, which is something quite apart from household decoration. A study of a home like the one here described and illustrated will help to make these statements clear.

The studio of Mrs. Alice Barber Stephens

The Roadway and the Grounds

By John Carey Edwards

OBVIOUSLY if one has a house one must have a road to it; obviously also, if one has a country house, there must be a house road that is connected with the public highway without the grounds. Here, then, is a real problem for decorative treatment and development, not often neglected, it is true, but sometimes not always realized to the utmost. The public road is, of course, public property, and is paid for and supported by public funds. Rural communities do not always rise to the requirements of the highly decorative places that frequently abut upon the public roads, and in such unfortunate circumstances the private owner is compelled, if he would possess a place completely beautiful, to maintain his own piece of public road in his own standard of excellence. There have been many instances of such pieces of road-making in America, and, doubtless, there will be many more, to the double advantage of the estates upon such roads and the beauty and convenience of the property owners in general.

The public highway, whether maintained by the local authorities or by the property owner, is an integral part of every estate that borders upon it. This proposition is so self-evident that it would seem to require neither argument nor illustration to support it; yet it is not without value to bring together, as has been done on the adjoining pages, a number of views of estate roadways, of roads without and within the estate, as object lessons in roadway treatment, and as explaining, as illustrations alone can do, the very great decorative value of handsome road borders and beautiful entranceways.

The proper inclosure of the estate grounds is a matter often hotly debated. To fence, or not to fence, is a question that has supporters for both sides. Shall there be a solid cement wall? Or a wall of stone, high or low? Or a wooden fence? Or a boundary of shrubbery? Or a lofty fence of iron? Shall the treatment be monumental or unpretentious? Shall the public be rigidly shut out, or shall it be permitted to view some of the beauties within? Or shall there be no inclosure at all?

As a matter of fact the question is not one to be determined by any one general rule. The fencing or inclosing is a part of the treatment of the house grounds, an integral feature in the landscape effect. There is, therefore, a natural and wide field for boundary treatment, which, in most cases, is really a question of personal taste rather than the following of any set series of rules.

On the question of fence or no fence there is this to be said: the inclosure of small grounds, as in a village street, offers a very different problem from that which obtains in the inclosure of a considerable estate, embracing many acres. A row of small houses, each standing on a small plot of ground, rigidly fenced from each other and from the street, presents a very different problem from the large house standing in the midst of spacious grounds with perhaps no other residence in sight. It should be very clear, in the latter case, that no oversight can be maintained over the grounds in general unless there is a well defined line of demarcation, and no way at all of indicating individual ownership of large grounds on the highway border, save by an inclosure of some sort.

A monumental entrance and roadway

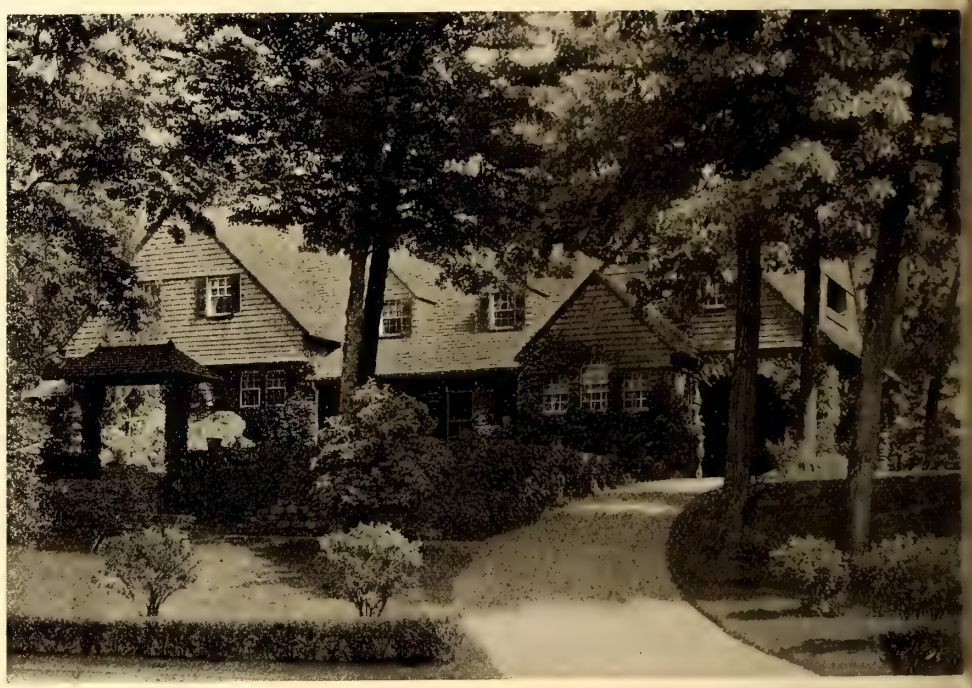
Hence for large estates, and often for small ones, we are likely always to have some inclosure of one kind or another; and this, as has already been set forth, is a matter dependent upon the whole treatment of the grounds and of the individual personal taste shown in the development of that treatment.

Very apparently, therefore, there is an amplitude of ways in which this problem may be met and solved. The illustrations which accompany this article show many of these, and each of them is full of suggestion and interest. A border of grass is, of course, quite universal, since the art of the landscape gardener knows no more useful nor beautiful material.

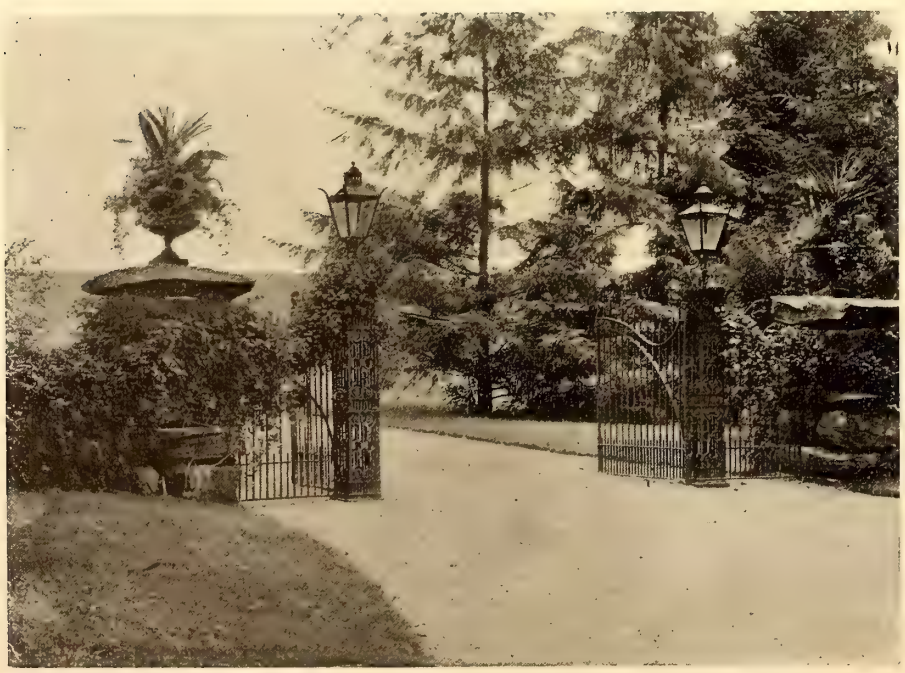
Roadway decorations of pots and jars

A simple road entrance

Luxuriant border of tree growth



A short road from the highway to the house



Entrance gates and roadway

A beautifully planted road border

A formal planting of evergreens

A pleasant stretch of road

A roadway within the grounds

Wall facings beside the road

A roadway in the woods

A California road and entrance

Roadway decorations of pots and jars

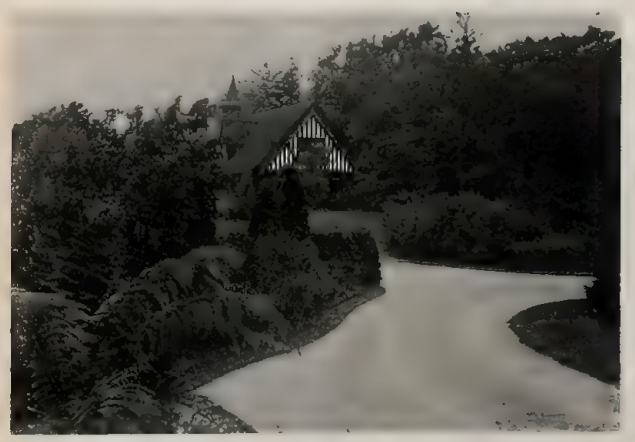
A simple road entrance

A formal planting of evergreens

A pleasant stretch of road

Luxuriant border of tree growth

A short road from the highway to the house



A roadway within the grounds

Wall facings beside the road

Entrance gates and roadway

A beautifully planted road border

A roadway in the woods

A California road and entrance

Many a fine property has its roadways bounded on both sides by wide stretches of lawn alone, a method always beautiful, but wanting somewhat in color and warmth. A treeless roadway is seldom a thing of beauty, even when the eye is carried across a broad greened space to woods and trees in the distance. One can not do much in landscape decoration without trees and shrubbery; and after the grassed border the problem advances to the next stage of shrubbery treatment and trees. Here, as the illustrations show, there is the very widest latitude for individuality of effect. Trees of one kind, or lofty shrubs, may be planted in solid rows or spaced, with or without lower shrubbery between them. A great garland of rhododendrons may be swung beneath the forest trees if the roadway is fortunate enough to pass beneath the survivors of the primeval growth. Beds and borders of gaily blooming flowers may preempt the foreground, and constitute a veritable illuminated border until the brilliant picture is closed by a wooded growth some distance within.

The real problem is one of design, and in quite the same sense as the design of the house. It means care and attention. It means taste and ability to design. And it means, quite as much as anything, the utilization of natural conditions. It is true enough, in these days of large plantings, that whole trees can be transplanted at practically any period of growth; and not a few property owners will point, with quite justifiable pride, to beautifully wooded estates that at the beginning were treeless, plantless, barren wastes. All this is true enough, but one need not effect such wholesale transformation from the sheer love of change. Any considerable landscape work is an expensive undertaking, and the really fortunate owner is the one who has, within his estate, such natural beauties as lend themselves to further beautification. Certainly such a one is better off than he who must bring every tree and bush to his grounds, exactly as he has had transported every piece of iron and wood and stone and other material that has entered into the construction of his dwelling.

And he is especially fortunate when his border lines lend themselves to decorative treatment. The first impression of a place is gained from without. External beauty must begin at the most external point. And this brings us back to the original proposition, that the external border must be subjected to artistic treatment, and that the relation of the home road to the public road must be effected in a beautiful and agreeable manner, in keeping with the landscape properties of the estate and consonant with the scale upon which it is planned and maintained.

How this shall be done is not so important as the doing of something. The question of posts and gateways, of arches, pillars and walls are matters to be determined by an intimate study of the particular problem involved. Each has a value of its own, each has its own work to do, and each does it in its own way. The problem is one of fitness and beauty. If a definite emphasis is desired at the entrance—and a post or pier, a column or arch is a definite emphasis—it is useless to discuss these matters in the abstract, but only in their relationship to the individual problem under consideration. And the aspect of beauty is quite of the same sort. It is not so much what shall be used, as how it is used. And over and above all other considerations, first and foremost the supreme test, the only thing to be considered, is the result good and beautiful? Does it answer the desired requirements of individuality, fitness, beauty and utility? Is it the right thing in the right place? If these questions be answered in the affirmative there will be little fault found in the matter of cost.

A final word on what each one shall do for his own place. It is well to remember that the solution adopted by others, no matter how successful or how beautiful it may be, may not answer at all for another problem which has a different environment, or which is developed under different conditions, or which calls, as it certainly will call, for special and individual treatment. The illustrations here presented have each their own point of excellence and advantage, but these excellencies and advantages cannot be divorced from the physical conditions under which they were developed. This is the great crux of all landscape work. General advice fails utterly when applied to such matters, and it is only the individual study, the individual treatment, the individual solution that admits of success and actually obtains it.

A broad driveway gives stateliness to the entrance

Giant Leaves

By S. Leonard Bastin

THERE are few things which impress the student of plant life more than the amazing diversity exhibited in the designs of leaves. The foliage of vegetation varies in shape, from the simple types of the lower orders, up to the most elaborate forms in the highly specialized groups. The variation in size is no less a matter for astonishment. The tiniest leaves of all are so little that it is not easy to think of anything smaller; while ranging upward from these there is a scale composed of individuals ever increasing in bigness, leading us on to huge specimens which are the marvels of the vegetable kingdom. And yet the purpose of foliage all the world over is the same, in a general sense—to carry out the respiration of the plant. It may not be uninteresting to speculate upon the diversity in the forms of the larger leaves, and to inquire as to the benefits which the plants derive from the special designs in a few of the most striking instances.

The modern cabbage leaf as developed by cultivation

There is no getting away from the fact that the plant with very large leaves is at a distinct disadvantage, and it is not quite easy to see by what process certain species have become possessed of these huge organs. One would have thought that the all-powerful natural selection would have tended to modify the size of foliage, had not the facts, as far as some plants are concerned at any rate, shown otherwise. Plants with large leaves are almost world wide in distribution if we except the Arctic regions, and those desolate wastes of scorching sand which will support little vegetation at all unless it be of a succulent habit.

In the first place the plant with big leaves has one important difficulty to contend against—it can not produce very many of these organs. Thus if any part of the foliage is damaged the plant is likely to suffer pretty badly, for in some instances injury to one leaf might actually involve a sixth of the whole tree. Again, although some of the examples under consideration grow very rapidly, in the majority of cases it may be said that it takes relatively a long time to develop a new leaf if it has to be a very big one; and while this replacing is going on the plant will be suffering the loss of an important part of its being. But perhaps a still greater drawback to the big leaf, from the point of view of the economy of the plant, is the risk which it will run from wind damage. This is really a very serious matter indeed, and, as will be pointed out later, one which some very ingenious contrivances have been called forth to deal with. Lastly, the evaporation of moisture, always an important question in the plant world, will be much greater from a broad expanse than from a much restricted area. In this connection it is also instructive to observe that most of the species with large leaves find their natural home where water is abundant; some of them being even semi-aquatic in habit, and one of the most amazing plants being wholly so.

The Gunnera is a giant pie plant, with long stems and ample leaves

One is continually brought face to face with the fact that there must be some law of compensation. An animal or a plant is lacking in one particular direction, but to make up for this more often than not it is favored in some other way. One can hardly find a better instance of this than in the banana (Musa), a species of which has leaves ten or twelve feet in length. These great organs are nothing like so tough as one would think they should be in consideration of their

The Monstera deliciosa has vast leaves strangely holed and broken on the margins

The single leaf of the South African elephant's ear is beautifully curved and ribbed

size, and as a consequence suffer very much harm in more ways than one. In the matter of wind damage there is no tropical tree which is more grievous a victim. Any visitor to a banana plantation knows that after a fairly fresh breeze the leaves of the trees are simply shredded into ribbons and the foliage otherwise torn and bruised. But to make up for this serious deficiency the banana is one of those plants gifted with the power of most remarkably rapid growth. It is said that these leaves will extend upward at the rate of ten inches or even more in a single night, and it will thus be seen that it does not take very long for the banana to make good any damage which it may have sustained. Indeed the vigor evidenced in the Musa tribe is one of the most extraordinary things in the whole plant world, when it is remembered that throughout the whole of its existence the tree does not cease to bear flower and fruit.

One can well pardon the popular fancy which has dubbed the Gunnera a giant pie-plant. With its long stems and ample leaves, it looks very much like the humble species of our gardens, but on what a prodigious scale! A tall man standing by a well grown example of Gunnera is quite belittled, and yet this tremendous growth is made in a few short months. Most of the Gunneras are semi-aquatic in habit, and all are indigenous to the American continent, and in many ways it must be admitted that their size and habit render them fit to rank with the wonders of the earth. But in addition to the fact that these plants grow quickly, an examination of their foliage will show that their leaves, big as they are, can not come to much harm. The general texture of the great organs is tough, and the cells are so arranged that evaporation of moisture will not go on at an undue rate. Moreover, by a nice adjustment, unless the plant is almost growing with the roots in water, it will not develop leaves of the largest size. The stem bearing aloft the huge leaf is hard and fibrous, unusually strong for one which is not at all woody. In fact the whole appearance of the Gunnera gives an impression of robustness and strength which is not often present in species of its class. In passing, it may be mentioned that these plants are of easy culture, and should appeal to the gardener on account of the great effect which a few specimens will give.

Many of the Aroideæ are most interesting plants on account of the size of the foliage which they produce. Some of the members of a large genus (Anthurium), commonly grown under glass as foliage plants, develop very big leaves even under artificial conditions. A species known as A. brownii not infrequently produces leaves as much as four or even five feet in length. The leaves of these species are of substantial texture and peculiarly well protected against damage from wind. It is interesting to observe the manner in which

every vein of the leaf branching out from the mid-rib, instead of terminating at the extreme border, turns round in a curve and loops up with the one beneath it. Thus a kind of selvedge is formed which practically encircles the whole of the leaf, the value of which to check anything in the way of tearing is at once apparent. Most of the Anthuriums produce leaves which are really of very great beauty, and not a few species flower in a very attractive fashion, and on this account these tropical plants are in great requisition for the warm house.

Another interesting plant belonging to the Aroideæ is Monstera deliciosa, not uncommonly seen in large conservatories. The species produce very big leaves, thick and leathery in constitution, but still their very clumsiness would render them exceedingly liable to be injured. Instead of the border, which was so striking a feature in the Anthuriums, it is seen that the edge of the leaf is split up so that it forms a kind of a fringe; indeed one may say that it is torn already and will therefore not be likely to suffer much more hurt. The strange fillets in the interior part of the leaf will catch the eye at once, and it may not be out of place to inquire for a moment what is the meaning of this rather unusual feature. Under natural conditions the plant rambles up tall trees, and as there is a good deal of likelihood that the large leaves would obscure the light from each other the holes in the organs serve a very useful purpose. They act as kinds of windows to the leaf which happens to be underneath, letting through the light and possibly the air which otherwise would be excluded.

Many plants related to the Arums produce large leaves. A Central American species known as Dracontium gigas has been known to develop leaves which were no less than fourteen feet long. It is said that the whole plant is a most remarkable spectacle from the fact that the stem of this colossal leaf is beautifully mottled with purple and yellow, and has been compared "to a huge snake standing erect at the bidding of an Eastern charmer." But even here we do not reach the limit of what is possible in the way of giant foliage. Some of the achievments of the Sago palms in this direction throw everything else into the shade. Not so long ago one which, it may be observed, was in captivity, startled its owner by sending out a leaf which was estimated to be more than forty feet in measurement. As a matter of fact it is likely that this particular specimen would have been even longer than this had it been possible to allow it a freer growth than it could get under glass. Of course, in the open under very favorable conditions even this would be exceeded, though, as it may be imagined, the chances that such a great leaf would come to grief are very great indeed.

As a general rule the water plants can not be said to be the possessors of very

The elephant's ear of South Africa produces only one quaint leaf

Anthurium leaves of immense size

large leaves, but to this there is one very striking exception. Most people are now more or less familiar with the giant water lily (Victoria regia), specimens of which are not uncommonly to be seen in botanical gardens. Perhaps few are aware that this plant is an annual, the whole of its enormous growth being made in a few months. On account of the fact that the edge of the leaf of this water lily is turned up, its supporting power is very considerable. Very fine examples have been known to bear a man sitting on a chair, although it is only fair to say that the average leaf would not support such a weight.

In reviewing the question of big leaves it would be out of place not to refer to what man has done to increase the size of the foliage of plants for his own ends. This is well instanced in the case of the cabbage, a plant for whose ancestry we must look to a most insignificant species with small leaves. It is perhaps one of the greatest triumphs of the horticultural world that out of this useless plant (Brassica oleracaea) has been created such a vast number of varieties of such great value to the whole race of mankind. The cabbage only produces its large leaves because it has been made to do so, and it will soon revert to something like its natural state if left unsurrounded by all the stimuli of artificial culture for any time.

The banana leaf is one of the largest grown in nature

The Compost Heap

By Ida D. Bennett

ONE of the first necessities of gardening is good soil; this is not always available, as the entire land at command may be of a nature unsuited for the growing of either flowers or vegetables; this is especially apt to be the case in small city lots where gravel, hard pan and the earth thrown out in excavating for the foundations of the house form the bulk of the soil. Leaf mold or humus, which being translated means simply vegetable matter decayed, without the aid of water, in distinction from muck, which is produced by the decay of vegetable matter in contact with water, as the muck of marshes or that at the bottom of ponds, is available to the dweller in the country or village to some extent and forms one of the most practical means of renewing or building up a wasted or impracticable soil; but as leaf mold is often unobtainable from natural sources, there is no reason why one should not manufacture their own leaf mold or humus, as the materials are always close at hand demanding disposal of some sort.

If all the rubbish in the way of dead leaves, plants, manure and the like is piled in some out of the way corner to decay it will in time result in a fine black soil or mold. Mingled with a clear, sharp sand, they together form an ideal potting soil for many varieties of plants, and also an important ingredient in good compost, and, as a top dressing for a poor soil, is unsurpassed.

There is very little decayed vegetable matter or other matter, except animal, which may not be turned to account to increase the fertility of the soil—feathers, old paper and rags, bones, sawdust and all the vegetable matter which is removed from the yard in the spring and fall cleaning and which accumulated during the summer. The slops from the laundry and kitchen should, if possible, be deposited on the compost heap; manure may be added to it with advantage, and the whole mass may be forked over occasionally to facilitate decay. Of course the leaves from the lawn will form the nucleus of the heap, and leaves produce the very finest of leaf mold—just that quality we procure from the woods—and it seems a great pity that such great quantities of them are destroyed each fall by fire when, with a little thought, so valuable an addition to the garden could be secured.

Having provided for the leaf mold it may not be amiss to secure a reasonable amount of fibrous loam for the compost which will be needed for the geraniums and roses; for this one may pile sods in alternate layers with cow manure, laying the sods grass sides down and forking them over occasionally to hasten decay and the breaking up of the sod, or sods may be cut and the under surface of the earth cut away just below the crown of the grass, and the soil thus obtained piled in a heap ready to use, the grassy top being relegated to the compost heap. This mixed with leaf mold and old, well-decayed manure makes the compost best suited for the potting of the majority of house plants and those grown in tubs for terrace and piazza decoration in summer, and, it goes without saying, is all that can be desired for the flower garden.

The compost heap need not necessarily be an unsightly object, as it may have some easily grown, rank vine planted about it to cover and adorn—as gourds, some of which are very ornamental. It should be inclosed in a frame of wood or pickets to keep it within tidy bounds; especially is this the case if exposed to the depredations of chickens, which aid materially in its reduction to the desired condition. Old window blinds make an excellent frame.

The Residence of Friend A. Russ, Esq.

"Rock Ridge," Greenwich, Connecticut

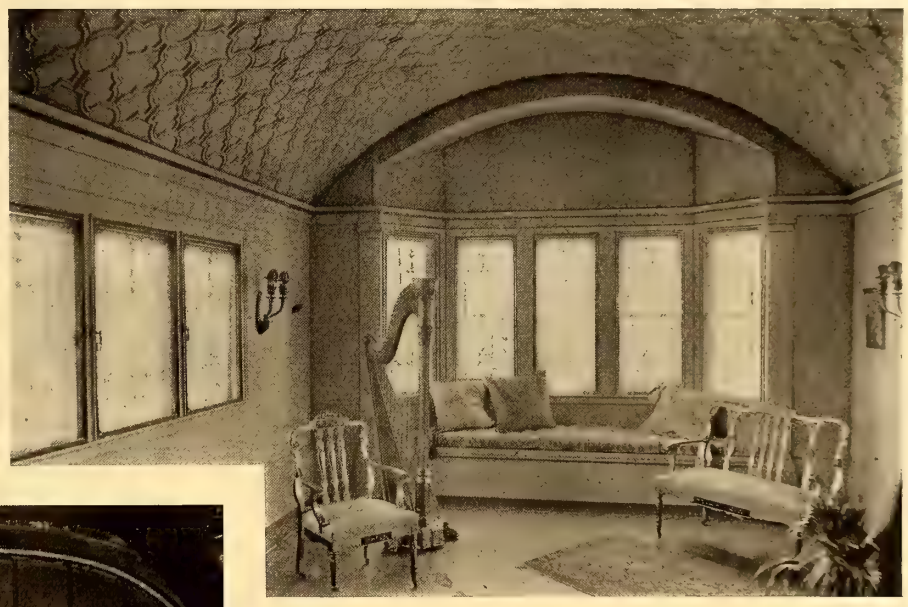
By Francis Durando Nichols

AS ONE turns aside from the broad avenue leading from Greenwich village through the stone gateway which marks the entrance to Mr. Russ's country residence, there stretches out before him a long drive of smooth macadam, bordered on the one side by a magnificent tangle of trees and sparkling streams, and on the other by a well kept lawn, studded with flowering shrubs. This driveway winds to the house, which stands on a knoll overlooking Long Island Sound. It is a unique house, built of stone and wood with English half-timbered characteristics.

The first story is built of huge boulders laid up at random with broad white mortar joints. The second story is covered with shingles left to weather finish, while the trimmings are stained and finished in a soft brown. The roof is covered with a similar shingle work. The entrance is from the porte cochere or from the hooded porch at the side of the porte cochere. Both entrance ways are built with brick floors laid in herring-bone fashion.

The hall is trimmed with chestnut stained and finished in a dark brown. The halls are paneled, rising up to an open gallery, the sides of which are hung with crimson figured silk. The staircase has a handsomely carved newel post, balustrade and rail.

The music-room is reached from the hall by a rise of three steps. It is a great room built over the porte cochere, and



The walls of the music-room are covered with yellow watered silk and the trimmings are ivory-white

has a "Haddon Hall" ceiling designed in a geometrical form. The walls are hung with yellow watered silk, and the trimmings are painted ivory-white. Renaissance lace draperies in one panel are hung at the windows. The bay window at one end is provided with a seat upholstered in yellow silk. The floor is laid with parquetry.

From the hall three steps descend to the living-room, which is on a different level. This living-room is also trimmed with chestnut and is stained brown, finished with a green stain rubbed into the grain of the wood, with a harmonious effect. The ceiling has heavily molded beams forming panels. The inglenook is the feature of the room, with a great hooded canopy handsomely carved and placed above it. It has a pressed brick fireplace and a Welsh tile hearth and floor extending over

The chief characteristic of the den is its treatment with Japanese furniture and decorations

The inglenook of the living-room is its great feature with a handsomely carved canopy built above it

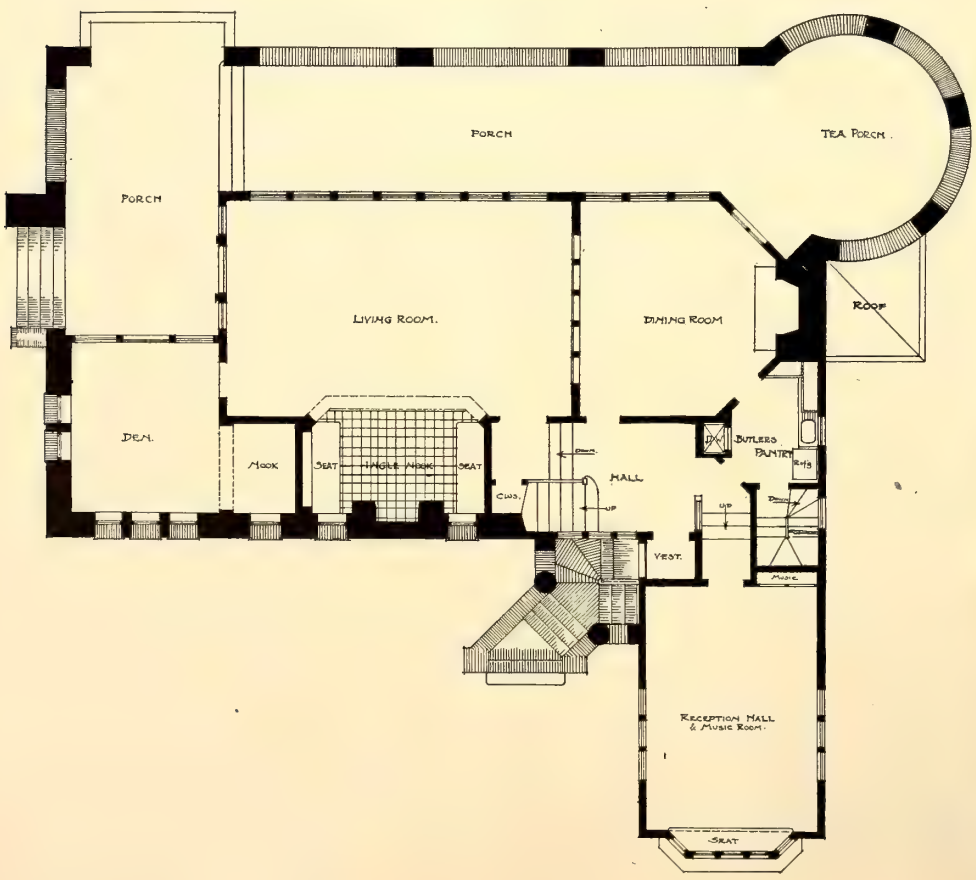
the entire opening. On either side of the fireplace are leaded glass windows and paneled seats, with book shelves built in above. The walls are hung with green silk, and the draperies are in harmony to correspond.

The den, which is off the living-room, has paneled walls in chestnut, finished in a soft brown tone. It is finished throughout in Japanese style, with cabinets, chairs and ornaments.

The dining-room is on a level with the hall, and is trimmed with brown stained chestnut. The ceiling is paneled and the flat surface is covered with Dutch mettle lacquered in antique gold. The walls are covered with tapestry paper. The fireplace has an imitation Caen stone mantel and brick facings and hearth. The partition between the living-room and dining-room is filled in with casement windows glazed with leaded glass.

The butler's pantry is fitted with dumbwaiter and drawers, dressers and cupboards complete. Stairs lead to the kitchen, which is placed in the basement. There is also a laundry, pantry, heating-room and fuel rooms in the basement.

The second story is divided into five bedrooms, two bathrooms and a den for Mrs. Russ. These rooms are finished with white painted trim and walls decorated with artistic color schemes. The bathrooms have tiled wainscoting and floors, and porcelain fixtures and exposed nickelplated plumbing. The third floor is



Plan of first floor

The house is picturesque with rough stone for th

reached by two stairways, one of which ascends to the billiard-room and extra guest room, and the other is a private way for the servants to their rooms.

The architects, Messrs. Kirby, Petit & Green, of New York, used great care when they designed this house, for the reason that it had to meet certain requirements. The highest point of the estate was selected for the site on account of its commanding position and the magnificent views obtained from it. The house was built with its end toward the roadway in order to secure the southern exposure for all the principle living-rooms, while the music-room, which was placed on the northwest side of the house, receives the glowing tints of the setting sun in the late afternoon.

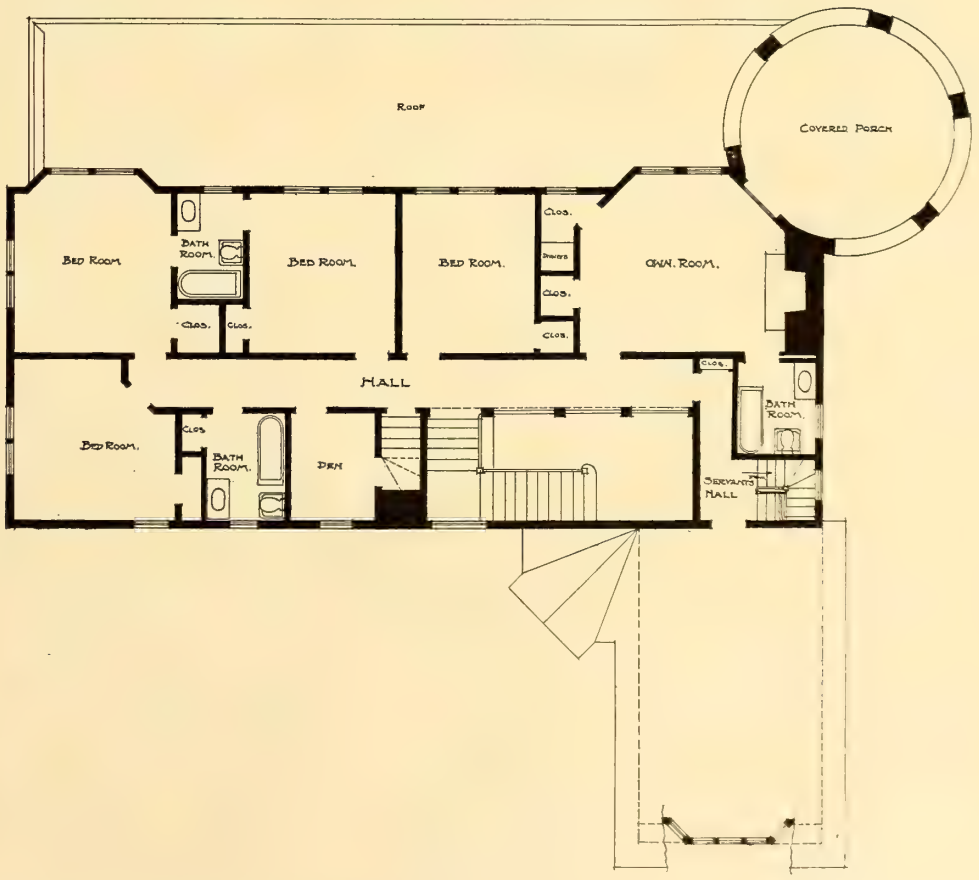
The dining-room has a Caen stone mantel with fireplace faced with brick. The woodwork is of chestnut stained brown

It was quite important that the principle living-rooms of the house be placed so that they secure the early morning sun in winter and the prevailing breezes from the sea in summer, and it was particular important that the sleeping-rooms be arranged in a similar manner; this is a point which has been very carefully considered in the designing of this house.

The landscape work about the grounds has been quite extensive. All the corners of the roadway which winds in from the main thoroughfare are planted with an artistic profusion of growing plants and shrubs.

A similar planting is done about the house.

rst story, and natural shingles for the second



Plan of second floor

The inglenook of the living-room is its great feature with a handsomely carved canopy built above it

in chestnut, finished in a soft brown tone. It is finished throughout in Japanese style, with cabinets, chairs and ornaments.

The dining-room is on a level with the hall, and is trimmed with brown stained chestnut. The ceiling is paneled and the flat surface is covered with Dutch mettle lacquered in antique gold. The walls are covered with tapestry paper. The fireplace has an imitation Caen stone mantel and brick facings and hearth. The partition between the living-room and dining-room is filled in with casement windows glazed with leaded glass.

The butler's pantry is fitted with dumbwaiter and drawers, dressers and cupboards complete. Stairs lead to the kitchen, which is placed in the basement. There is also a laundry, pantry, heating-room and fuel rooms in the basement.

The second story is divided into five bedrooms, two bathrooms and a den for Mrs. Russ. These rooms are finished with white painted trim and walls decorated with artistic color schemes. The bathrooms have tiled wainscoting and floors, and porcelain fixtures and exposed nickelplated plumbing. The third floor is

the entire opening. On either side of the fireplace are leaded glass windows and paneled seats, with book shelves built in above. The walls are hung with green silk, and the draperies are in harmony to correspond.

The den, which is off the living-room, has paneled walls

reached by two stairways, one of which ascends to the billiard-room and extra guest room, and the other is a private way for the servants to their rooms.

The architects, Messrs. Kirby, Petit & Green, of New York, used great care when they designed this house, for the reason that it had to meet certain requirements. The highest point of the estate was selected for the site on account of its commanding position and the magnificent views obtained from it. The house was built with its end toward the roadway in order to secure the southern exposure for all the principle living-rooms, while the music-room, which was placed on the northwest side of the house, receives the glowing tints of the setting sun in the late afternoon.

It was quite important that the principle living-rooms of the house be placed so that they secure the early morning sun in winter and the prevailing breezes from the sea in summer, and it was particular important that the sleeping-rooms be arranged in a similar manner; this is a point which has been very carefully considered in the designing of this house.

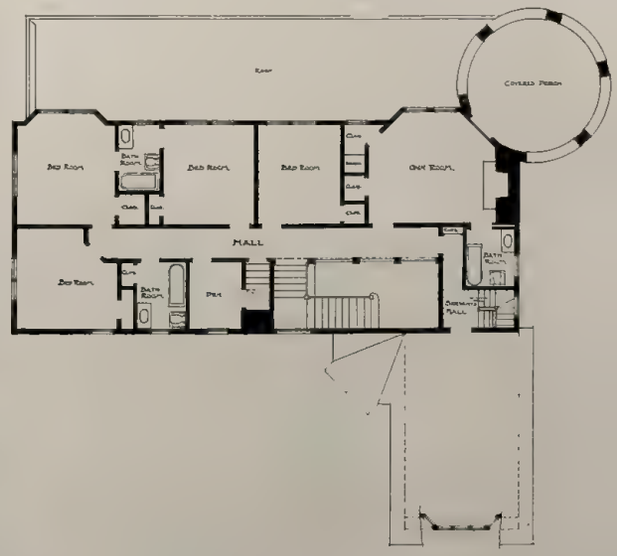
The dining-room has a Caen stone mantel with fireplace faced with brick. The woodwork is of chestnut stained brown

The landscape work about the grounds has been quite extensive. All the corners of the roadway which winds in from the main thoroughfare are planted with an artistic profusion of growing plants and shrubs.

A similar planting is done about the house.

Plan of first floor

The house is picturesque with rough stone for the first story, and natural shingles for the second



Plan of second floor

New Developments in Stenciling

By Mabel Tuke Priestman

WITHIN the last few years so much has been written on stenciling that there is hardly any household where at least one member has not become proficient in the art. The work is easy to do, being mechanical, and as patterns can often be bought through magazines, the fact of not being skilled with the pencil is no longer a hindrance to good work.

Stenciling is an art in which the craftworker can rise to any height if she aims to do original and distinctive work. There are several women in America who have revolutionized this craft and who have worked on individual lines and have really done something worth while. One of the newest stencilers whose work is now being recognized as of the highest quality is Miss Bessie M. Menage. She studied design in the Art Department of the University of Chicago, and while there made herself proficient in the art of stenciling. She made a name for herself in decoration in the Middle West, and, like so many women decorators, prefers to carry out her work in detail.

One of the illustrations shows a frieze and curtain designed and executed by Miss Menage. The walls were of a soft gray brown. The stencil is done in three colors, each differing only slightly in tone from the wall color. The design was taken from a horse chestnut tree in the garden outside the library window. The chestnut burs are dull gray terra cotta, the leaves a gray green, and the conventional lines of the design of a dull gray blue. Another tone is used in the lines at the bottom of the stencil, which are terra cotta, introduced so as to bring the frieze into harmony with the mahogany furniture with which the room is furnished. The tones in the rug are repeated in the frieze, making a most harmonious and restful room. The windows are draped with Arabian net and an inner curtain is of gray green monk's cloth ornamented with a stencil adaptation of the chestnut design. Portieres of the same material are stenciled with the wider design of the frieze.

In the same house a lotus design is used as a frieze in the drawing-room. The owner wished to have the decorations taken as far as possible from the flora of the neighborhood and a pond of Egyptian lotus near by suggested a good motif. Miss Menage made a conventional design of buds and flowers and stenciled them in eight colors on perfectly lusterless walls.

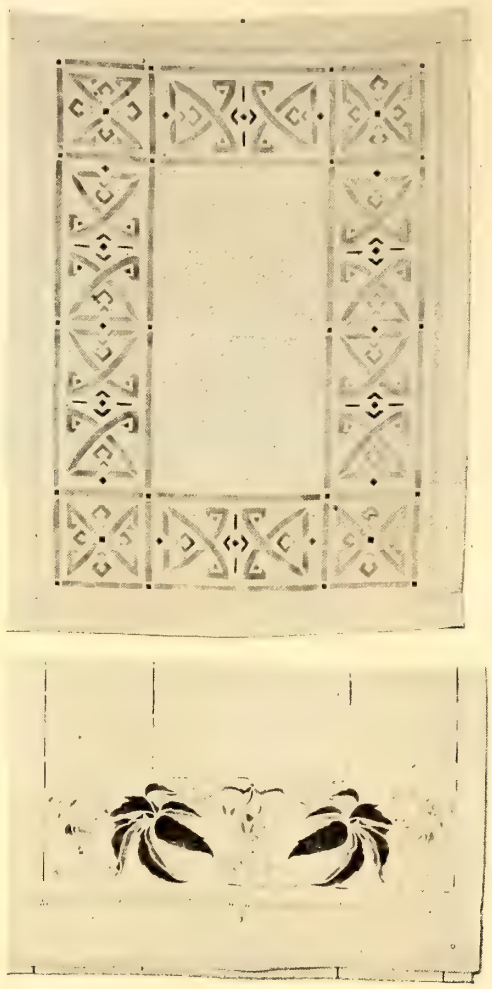
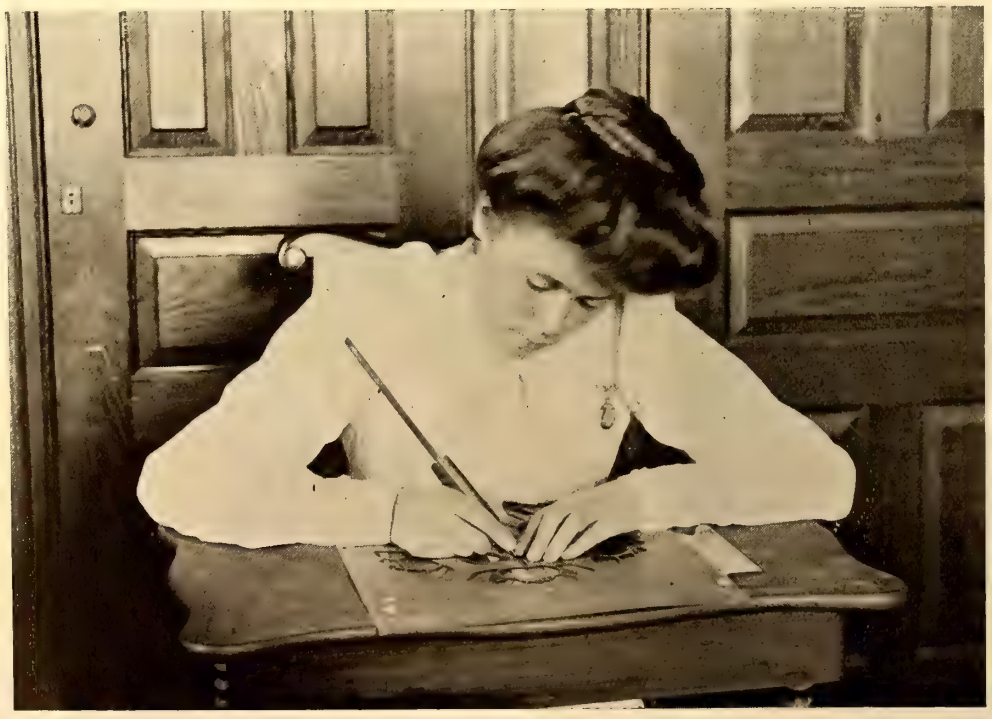


Table cloths shown at the National Society of Craftsmen exhibition

Very few stencilers have the courage to do elaborate and extensive work of this sort when they have to stand on an elevated platform, and they usually are content with making the designs and superintending a fresco painter, so that it is encouraging to find that a woman has successfully stenciled many friezes with as much ease and skill as though she had been trained as a fresco painter. Oil colors were used mixed with turpentine and winton white, which gave a lusterless effect to the colors.

Those who have gone deeply into stenciling work out for themselves certain methods. When stenciling on cloth Miss Menage, instead of using the color direct, always makes a pad of several thicknesses of old cotton cloth which she saturates with pigment. She uses this pad instead of applying the brush directly to the paint or dye, and she finds that in this way there is practically no danger of the color spreading on the material. When using oil paints on fabrics she mixes them with benzine until they are as thin as ordinary dye. A pinch of sugar of lead acts as a fixatif and keeps the color from flowing under the stencil. For materials that are not to be washed frequently she prefers dye, and the only fixatif she uses is mucilage.



Cutting the stencil

Another woman whose stenciling makes for originality and beauty is Mrs. Lora Elizabeth Hencke. Her designs are very bold in character, and a unique innovation in her work is the strap hinge effect with which she joins narrow pieces of Russian crash together. She is particularly fond of working on this material and, as it

Applying the colors

is only fifteen inches wide, three widths are required for portieres or curtains. Needlework is also introduced in her pillow and table runners. Just a few bold stitches of Berlin wool repeat the color at the ends of the stringer, and give individual note to the work.

Mrs. Hencke has worked out several problems. One of these is the difficulty felt by all stencilers of making the wrong side of a heavy material as attractive as the right. Mrs. Hencke has invented a process whereby the color appears as strong and potent on the wrong side as it does on the right. This process she does not give to the public, and I know of no other stenciler who has yet succeeded in working this out, but it makes her work stand alone on that account.

In Europe stenciling has been taken up with great vigor, and a young Munich artist, Ludwig Jungnickel, has exhibited his stencils in Vienna and aroused great interest in the peculiar nature of his technique, which is an invention of his own. He uses cardboard for his plates and cuts them with a sharp knife. He then prepares the background on which the design is to be stenciled by giving it the desired ground tone. This he does by squirting all over it a pale color, using for the purpose a syringe. Worked from behind a wire screen, the color falls in minute particles, and the ground work assumes a rough, granulated appearance. The most pleasing effects can be produced in this way, as no two particles are ever uniform. The next step is to hold the stencil on this prepared ground and to work with a syringe and screen. Difference in texture is gained by changing the distance at which the screen is placed. He uses several sizes of syringes, according to whether he wishes his stencil to be fine or coarse in texture.

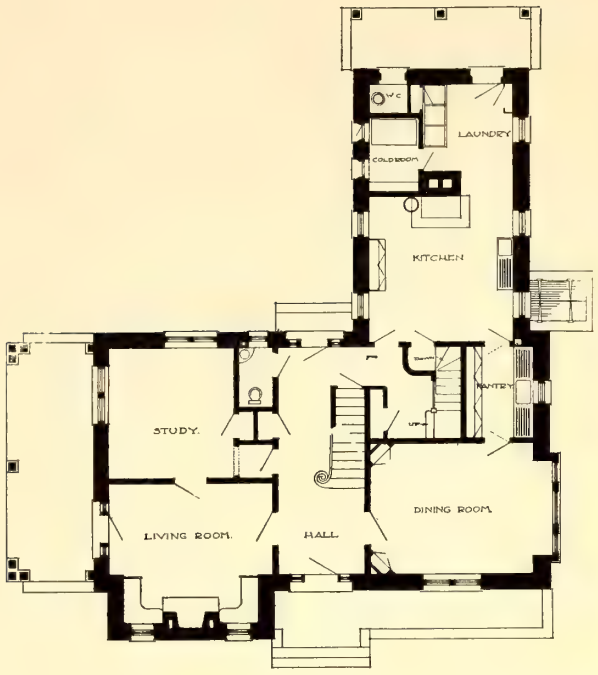
Frescoes done in this way are most original and unique, and American craftworkers are adapting this process to the simple requirements of stenciling and are getting excellent results by means of an atomizer, through which they squirt the color over the work instead of through a syringe and screen. Others again have succeeded beyond their expectations in following Ludwig Jungnickel's example.

Such developments in stenciling should be of great interest to those who have experimented in the ordinary way, and skilled craftworkers realize that there is always information to be gained the longer they work at a craft.

I have deliberately chosen, in this article, to refer to some examples of elaborate work in stenciling, since the craft, in many instances, is supposed to be quite humble in itself and to be limited to humble articles; in other words, to be comparatively unimportant. This can no longer be admitted to be the case. Stenciling is a craft capable of being applied to work designed on a large scale and employed in a large way, and is now being carried out with elaborate detail never before attempted.

Library with stenciled frieze and curtains with chestnut design

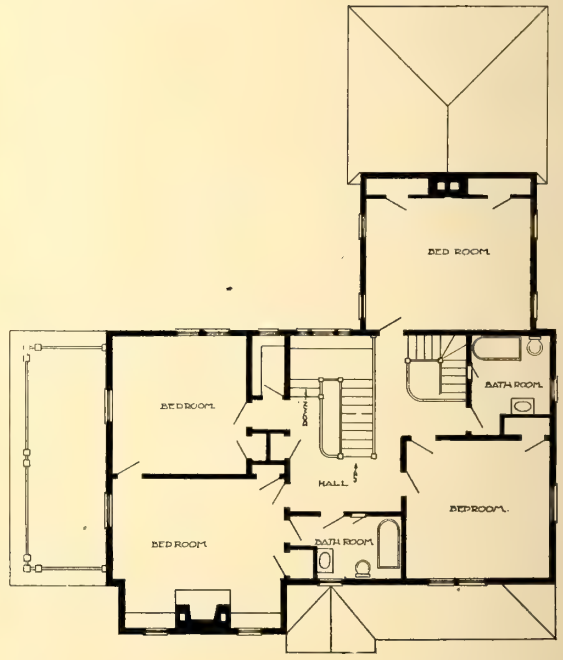
Residence of Prof. L. W. Reid at Merion, Pennsylvania



Plan of first floor

The long sweep of the roof gives breadth to the house

Rock-faced stone and stucco are the materials used for the exterior walls of the house



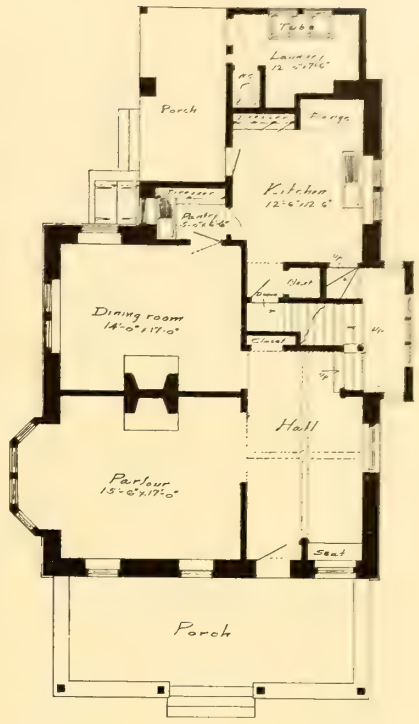
Plan of second floor

RESIDENCE OF PROFESSOR L. W. REID AT MERION, PENNSYLVANIA

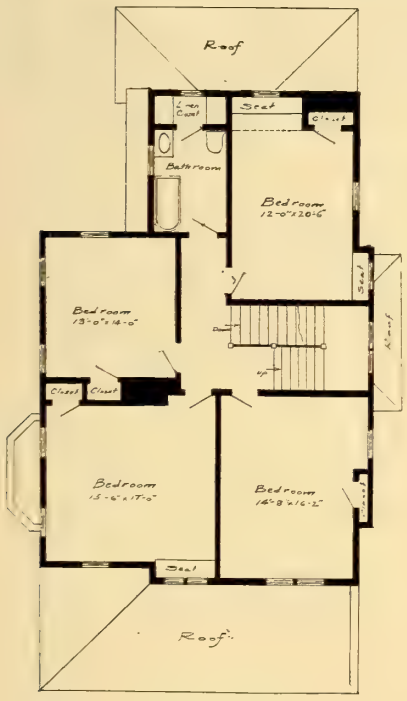
DESIGNED by Messrs. Bailey and Bassett, architects, of Philadelphia. Built of rock-faced graystone with broad white mortar joints, with shingled roof. The reception-room has a Colonial wainscot, painted white, with walls covered with a two-tone green paper. The living-room is trimmed with Flemish oak, with built-in bookcases and open fireplace. The dining-room is treated with a golden-brown effect, with walls lined with tapestry. The second floor is trimmed with white pine treated with ivory-white paint; each room has its distinctive color scheme. Here is the owner's suite of two bedrooms, dressing-room and bath, a single bedroom and bath, and two servants' bedrooms and bath. The third floor contains a spacious den.

A "Triple-Gable" House at Oak Lane, Pennsylvania

The south side of the house has three pointed gables



Plan of first floor



Plan of second floor

The house is of the half-timbered style, with the first story of stone and the second of stucco

A "TRIPLE-GABLE" HOUSE AT OAK LANE, PENNSYLVANIA

BUILT of stone, stucco and shingles for Charles E. Frick, Esq., at Oak Lane, Pa. Mr. Walter F. Price, architect, of Philadelphia. The design follows the English village type. The interior trim of the first floor is oak. The hall has a beamed ceiling; the parlor an open fireplace with tile facings and hearth; and the dining-room is connected with the kitchen through the butler's pantry. The second story is finished in white enamel and contains four bedrooms and bath. The third floor has three bedrooms and a trunk room.

A French Model Dairy

By Jacques Boyer

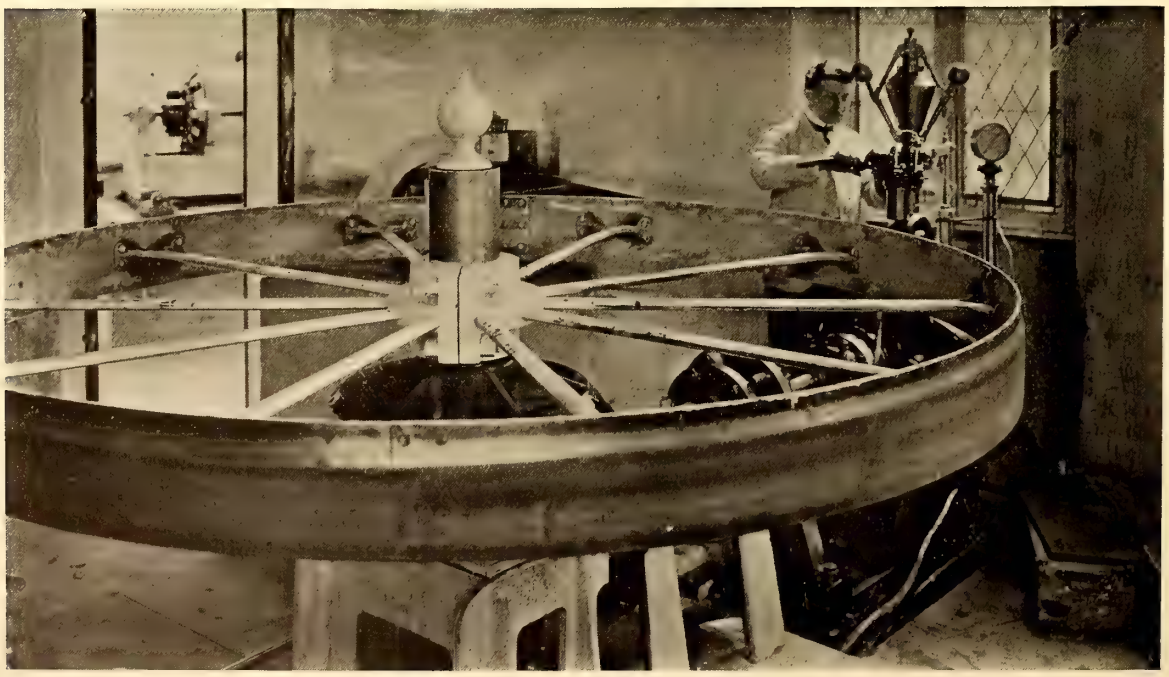
A MODEL dairy, to the management of which the latest discoveries of science are applied, is situated on an island of the Seine, near Bougival, ten miles from Paris. The dairy is conducted by Dr. Chateau on the most approved principles of veterinary hygiene.

The buildings are kept scrupulously clean and neat, and are painted blue, because flies avoid that color. No straw or other vegetable litter is used, but the floors of the stalls are covered with a thin layer of sterilized sand, which is changed daily. The sand swept from the stalls is washed with water to remove the manure it has absorbed, and after it has settled and dried is used again. The water is collected in a cistern and employed to irrigate and fertilize the meadows.

Most of the cows are of the Jersey breed, the milk of which contains from 7 to 7.5 per cent. of butter fat, while that of the best of other breeds contains only 5.2 per cent. A few Breton cows are kept for breeding purposes. Crossed with Jersey bulls they produce daughters which are as good milkers as pure Jerseys and are more robust. There are also some Norman cows, but they are employed solely as wet-nurses. The calf, however, is not left either with its mother or with its nurse, but is put, immediately after birth, into one of the wooden "cradles" shown in the illustration. One reason for this isolation is that young calves are subject to certain contagious diseases, of which a single case might infect the entire herd.

The pneumatic milking machine employed at the Chateau model dairy

But the most original feature of this model dairy is the method of milking by machinery. The construction and operation of the milking machine are shown in one of the illustrations. Four india-rubber cups which are connected with an air pump are attached to the cow's teats and the milk flows through an india-rubber tube to a glass vessel, and thence to a copper tank. The operation is similar to that of a surgical cupping-glass, pressure being followed by suction. In this the inventor has imitated the natural action of the calf, which alternately sucks and presses the teat with its lips and tongue. The hand of the human milker, on the contrary, produces only pressure without suction, and the cow is fatigued by this unnatural action. The pneumatic milking machine causes no distress, and the cows take very kindly to it. Before the cups are applied the teats are cleaned with a brush containing a tube through which a stream of warm water flows. Eight sets of cups are attached to the apparatus and eight cows can be milked at the same time. The two operations, pressure and suction, are readily distinguished by the observer, and the milk is seen flowing through the glass vessel on its way to the copper tank, where it arrives in a state of perfect purity, for it has not even had an opportunity to absorb germs or odors from the air. Milk obtained by the ordinary method is not only contaminated with atmospheric germs and dust but often contains particles of manure.



Turbine and dynamo of the model dairy

In the neat and comfortable stables the cows are arranged according to date of calving. The best milk is produced in the first

General view of the model dairy at Bougival, near Paris

Open-air "cradles" for young calves

months of milking, and Dr. Chateau desires to furnish products of different and accurately known qualities for the use of physicians, because milk of various degrees of richness is required by infants, according to their vigor and physical condition.

This model dairy has a large and well designed mechanical plant. Power is furnished by a turbine driven by the Seine, and is distributed electrically, and by shafts and belts, throughout the establishment to various machines, including one for washing milk bottles, a refrigerating machine, by which the milk is kept at the temperature of 39 degrees Centigrade until it is shipped to Paris, and a pump which draws very pure water from a well nearly two hundred feet deep. The buildings are lighted electrically by power furnished by the same turbine.

Jersey cow stable

Washing sand which has been used for bedding

One hardly dares to look forward when dairies of this scientific nature will be generally installed, yet it is to precisely such stages that modern science and modern sanitation is tending. The individual cow owner must, it would seem, remain content with the ordinary devices, or rather with the lack of devices, that have been in habitual use for ages, but new methods and new ideas are being continually developed for the large dairy.

A rest in the field

The Colonial Residence of J. Randall Williams, Esq.

Haverford, Pennsylvania

By Paul Thurston

A RECENTLY completed residence following the style of the Colonial, and affording many interesting features, is the new home of J. Randall Williams, Esq., at Haverford, Pa. The house shows a careful conformity to historical style and at the same time illustrates many modern tendencies, and in its interior is incorporated all the appointments required in a well-regulated and up-to-date house. It was built from plans prepared by Messrs. Baily and Bassett, architects, of Philadelphia, Pa.

The situation chosen is an attractive one, and permits of giving a broad expanse to the house, which is reached by a straight walk passing in from the street to the terrace extending across the front, and also having access to the house from the driveway circling in from the same roadway. The walk is laid with red brick and is inclosed with a low-cut privet hedge. The terrace is also laid of brick and forms a foundation for the porch roof over the entrance-way and the family porch at the side of the house.

The house, which is of wood, is covered with white painted clapboards and green painted blinds; a color scheme of the typical New England Colonial house. The roof is shingled. The details of the columns, balustrades and dormers are finely executed and show the refinement of this particular style of architecture. From the porch at the front the entrance is reached, and a broad door opens into the hall, which is a central one, extending through the entire depth of the house. The woodwork is painted white and the walls are tinted in an old rose, while the rugs and stair carpet are in harmony. A staircase is of ornamental character with white painted balusters and a mahogany rail. The living-room is at the front of the house and to the right of the entrance. Its woodwork is painted white and the walls are tinted in an old Colonial yellow. The open fireplace is built of brick with the facings and hearth of similar brick, and a mantel finely designed in the Colonial style. French windows, on either side of the fireplace, open into both the inclosed and open piazza, which is isolated from the front entrance, thereby insuring privacy to the family and their intimates.

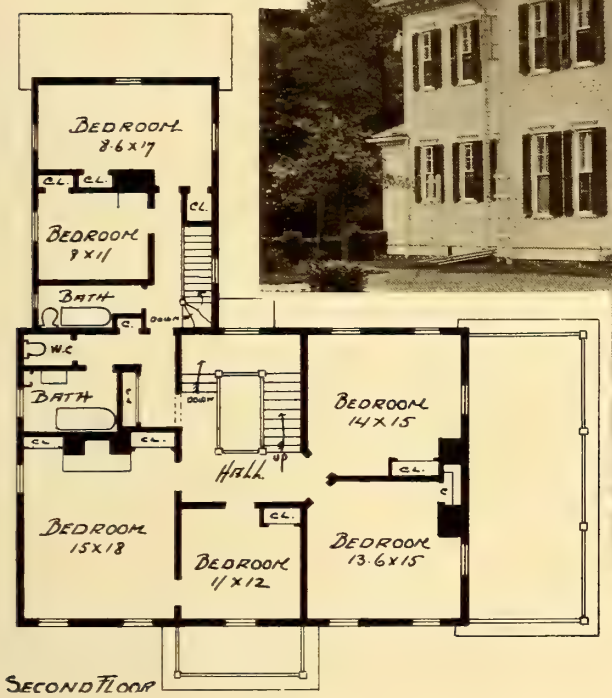
The library, which is immediately back of the living-room, is furnished with a white painted trim and walls covered with green striped paper. Bookcases are built in at one side of the room, and the corner fireplace is built with brick facings and hearth and furnished with a finely detailed Colonial mantel. To the left of the entrance, and corresponding to the living-room, is the dining-room, which has a white painted trim, decorated walls, and Colonial fireplace. The room is furnished with mahogany furniture of antique pattern. A door opens into a butler's pantry, which is fitted with sink, drawers and dressers; while another door opens into the kitchen, placed in the extension. This arrangement admits of a cross ventilation. There is a sink for the washing of the kitchen utensils, range, dresser, and a stairway to the second floor and to the cellar. Beyond the kitchen is the laundry fitted up complete with laundry range, laundry

The library has green striped wall paper and white painted trim
The Colonial furniture is appropriate

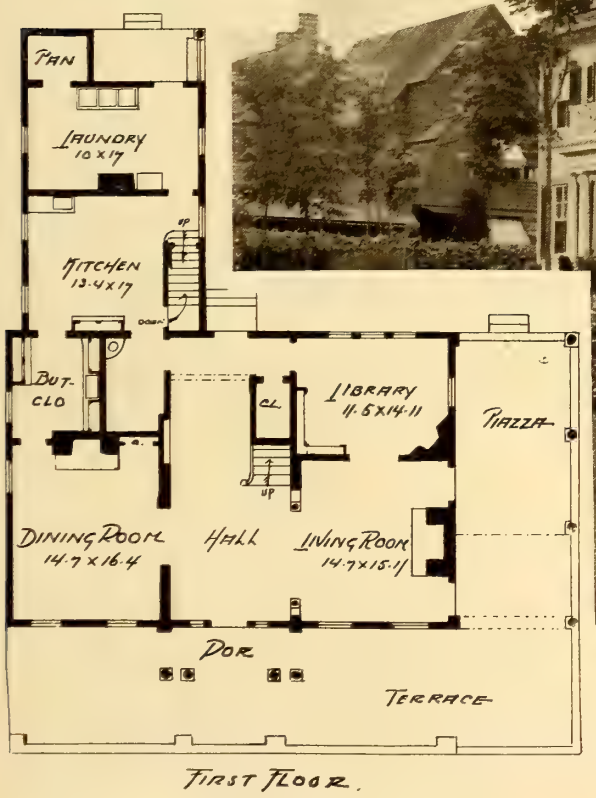
A broad walk paved with brick and lined with a privet hedge leads to the entrance of the house

tubs, store closet and a servants' porch with seat.

The second floor is treated with white paint for the trim and a separate, yet harmonious, color scheme for each room. There are four bedrooms and bath and two servants' rooms and bath on this floor. The bathrooms have tiled floors and wainscoting and porcelain fixtures and exposed nickelplated plumbing.



Mr. William's house is designed in the Colonial style



A part of the piazza is inclosed with glass, forming a sun-room

The staircase, with white painted balustrade and mahogany rail, is the feature of the hall

There are two bedrooms and a bathroom, a large den and a trunk room on the third floor, and a furnace room, fuel room and cold storage room and provision room in the cellar.

The side piazza directly overlooks the garden, which, though comparatively small, has been designed with a view of producing the best possible results from a given space.

The garden while a semi-formal one has been laid out with much care. The various beds have been planted with both annuals and perennials, and they have been selected in a manner to secure a continual bloom from early spring till the late autumn. Beyond this garden, which is separated by a pergola of simple style, is the vegetable garden, laid out with grassed walks, at the edge of which are planted the kitchen flowers, to be used on the dining-room table and throughout the house.

To the left of the estate and reached from the main highway is the stable, which is designed in keeping with the house, and of the same style of architecture. It is also painted white, with green painted blinds. The interior contains a carriage room, which has a well-fitted harness closet with sliding glass doors, and a stable for the keeping of two horses. The stalls are fitted with ornamental iron fixtures and the best improved appliances. Both the carriage room and the stable are ceiled up with narrow beaded yellow pine finished in its natural wood. The second floor contains the man's room and ample space for the storage of hay and feed.

The antique mahogany furniture in the dining-room carries out the Colonial character of the house

CORRESPONDENCE

The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

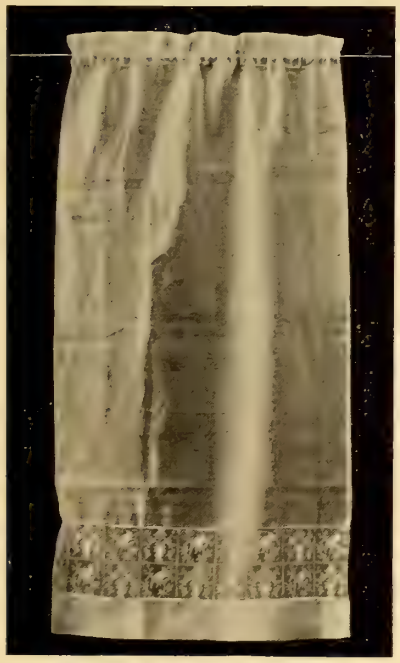
By Alice M. Kellogg

Author of "Home Furnishing: Practical and Artistic"

SIMPLE BEDROOM CURTAINS

WRITING from a small town in Vermont, M. E. C. asks for some ideas for simple, dainty curtains for bedrooms. "In your department for advising on matters relating to the furnishing of the home you mention stencilled curtains. These, however, are quite beyond me, as I know nothing of paints or painting. Neither am I skillful with the needle. I have been using ruffled muslin curtains for my bedrooms, but these soon look draggled and untidy. Is there not something inexpensive but different from what one sees everywhere at the windows?"

A curtain that looks very pretty hung straight across the window can be made with fine white organdie or muslin, with an insertion of imitation filet in bands, as shown in



A simple bedroom curtain

the illustration, just above the bottom hem. The filet comes by the yard, with the squares four by four inches. After making the heading at the top and the hem at the bottom, two bands of the filet are stitched across the bottom and the muslin cut away underneath. This is not a difficult piece of work, but should be done neatly. If the window is very high, another row of the insertion may be stitched about twelve inches below the top.

DINING-ROOM FURNITURE

"The woodwork in my dining-room is finished in the light or natural oak. Kindly let me know if I shall buy my furniture to match this woodwork. I notice in the shops that almost everything in dining-room furniture is finished in the dark brown. Another point that I am disturbed about is whether to get two arm chairs or have all side chairs. Also, is a round table advisable, or is the square size better? If round, what diameter? A sideboard or a buffet?—W. S., Kentucky."

The bright varnish of the natural or golden oak is not as desirable as the dull, dark finish. It is also easier to find good shapes without unnecessary ornament in the dark wood. Round tables are so much in demand that it is not often one finds a square shape, and the former has many advantages over the latter. The size of the table depends somewhat upon the size of the room. A four-foot table or a four foot six inches is the usual size.

As to the selection of the chairs, the round table has made the side chairs more popular than the old style of having an arm chair for the head and the foot of the table. If there is space for a sideboard this piece of furniture will be found more graceful and useful than a buffet. A side table placed near the pantry or kitchen door is a part of the dining-room furnishings.

WALL PAPER FOR A PARLOR

A southern correspondent, A. A. D., asks: "Would you have a paper on the walls of a parlor or paint the surface in oil or water colors? Is tapestry paper suitable for this room? Or, would a plain paper be better? Also, please give me some idea of a proper color."

The conditions of the house have so much to do with the treatment of a wall that it is difficult to advise in this matter without knowing more about the room and its surroundings. What is the woodwork? How many windows, and what is the exposure? What coverings are on the floor, and what are the predominating colors? The colors in furniture coverings it is also important to know. How the room is used is another point that must be considered in the choice of a wall paper. Replying in general terms to the question given in the above letter it would make a more pleasing effect to have a wall paper in this parlor instead of a water or oil-paint finish. A tapestry paper, unless light in tone, would not be as suitable as a two-toned buff or ecru color. A plain paper requires good pictures to give interest to the walls. An all-over design, printed in two tones of one color, is a safe selection.

BED SPREAD FOR A GUEST ROOM

"Something newer than the lace spreads with flounces around the sides and bottom," is asked for by Mrs. G. A. F., of Michigan.

As a pretty bed spread contributes so much to the appearance of a guest room, the home maker will do well to spend time and thought upon this detail. If twenty-five or thirty dollars can be spent on the bed spread, the newest and most attractive is one made of cream-white scrim, with drawn work and corner pieces of real filet lace. At a less price,

(*Continued on page xiv*)

Garden Work About the Home

By Charles Downing Lay

WHAT TO DO BEFORE THE HOUSE IS BUILT

"LAST summer," writes E. H., "I purchased a piece of land containing five acres, on which I expect to build a house costing about $5000. Not a mansion, but a nice comfortable house.

"I shall employ a good architect to design the house, and I do not want to spoil the entire appearance of the place by a poor outside layout.

"The lot is barren, with no trees whatever on it, and I am at a loss to know what to do. I want to get trees planted at once and give them a chance to grow. Last spring I planted an orchard of seventy-five trees, but nothing else has been done.

"The lot has a frontage of 800 feet on the river, and the highest point is probably not more than five feet above the water. The house, of course, will face the river.

"I want to have the place planted with trees and shrubs which will harmonize with the house, and I want the place to have some style."

There seems no reason why a man who is wise enough to employ an architect to design his house should not at the same time employ a landscape architect to locate it on the lot and design the grounds.

The benefits which come from getting the advice of trained men are the same in each case.

Both endeavor to get the best work which the conditions allow, and to show the client how his own ideas may be most effectively carried out, in order to give him a place which he will be proud of and enjoy.

The great advantage in employing a landscape architect is to have the place considered as a whole, and its future development completely arranged for at the start.

Ordinarily when people work without professional advice, they put the house in one convenient spot and the stable in another, without thinking of their relation to each other, or of the means of communication between them. After a year or more it may be found that both would be better if their positions were reversed, and that the present arrangement is inconvenient and unlovely.

Such haphazard work as this would be prevented by employing a landscape architect to study the whole problem in advance.

Another economy which comes from having a complete scheme at the start, is that any part of the work may be finished with full assurance that it will not have to be done over again when the adjoining portion is finished. No mistakes will be made, and mistakes are often the costliest part of amateur work.

These things are obvious, yet few people realize that works of landscape architecture can be as carefully planned on paper as any house, or boat, or railroad.

(*Continued on page xvi*)

IN the making of The Knabe is used the finest material that money can buy, and much that money cannot buy, for Knabe genius, Knabe ideals, the cumulative experience of three generations, and the Knabe artisan's pride in his work - these are priceless.

Style J, "upright" Grand $500 - Mignon, "horizontal" Grand $750 - Knabe Angelus $1050

Knabe Pianos may be bought of any regular Knabe representative at New York prices with added cost of freight and delivery.
We will be pleased to send illustrated catalogue and prices.

WM. KNABE & CO.

439 5th Avenue, Cor. 39th Street.

BALTIMORE NEW YORK WASHINGTON

Posed by MISS PAULINE FREDERICK

Copyright 1908, by Wm. Knabe & Co.

ANDREWS SYSTEMS OF

Hot Water Heating—Water Supply Plumbing—Sewage Disposal, Etc.

FOR AMERICAN HOMES—CITY AND SUBURBAN

These Andrews Systems are the outgrowth of twenty-five years of development in heating add plumbing engineering lines in all branches.

Ours is the business of designing and erecting, as well as of manufacturing; combining under one management both engineering and factory production of everything that has to do with Heating, Water Supply, Plumbing and Sewage Disposal.

No job is too large—and, for small jobs our methods are the acme of economy and efficiency at low cost.

We manufacture our own boilers, tanks and equipment, and sell everywhere—"doing it right in 44 States, Canada and Alaska.

One of our recent large contracts amounted to $50,000 for our own work. We do large plants, like the University Building shown below; and plan and erect special equipment for factories, etc., requiring air purification, special ventilation, etc.; also for heating costly homes.

Our elegantly illustrated catalogue gives details. See below.

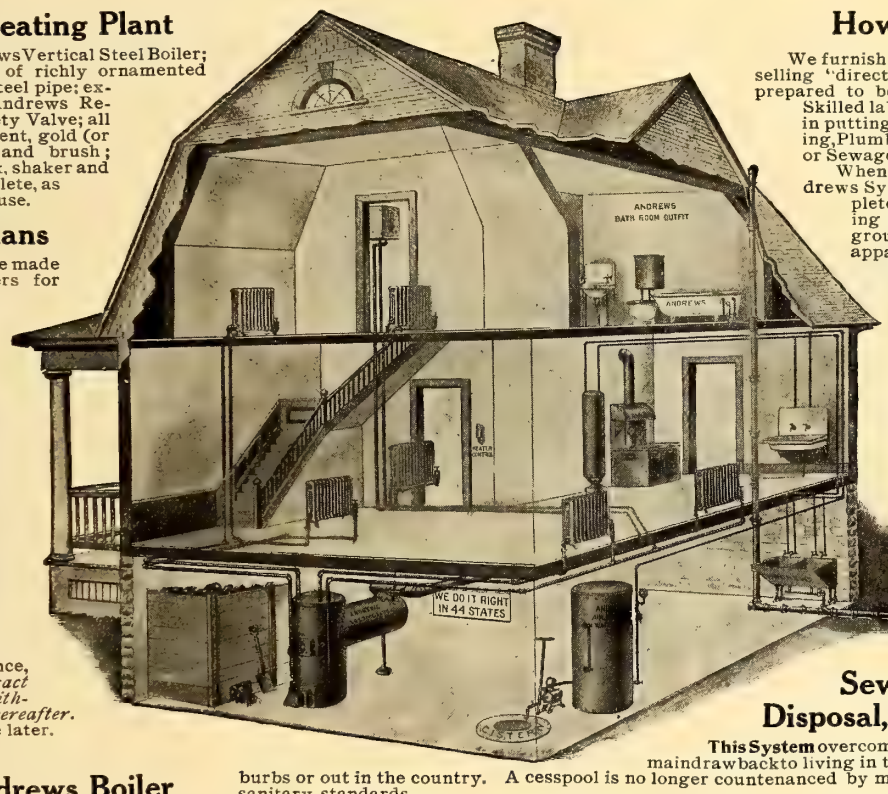
$215 Heating Plant

includes: Andrews Vertical Steel Boiler; complete outfit of richly ornamented radiators; best steel pipe; expansion tank; Andrews Regurgitating Safety Valve; all fittings, fire cement, gold (or silver) bronze, and brush; also clinker hook, shaker and flue brush, complete, as shown in this house.

Special Plans

and estimates are made by our engineers for each individual job. Send us to-day the plan of your house, or rough sketch with measurements, and we will submit an exact estimate of cost delivered to your city, also what you should pay for installing, employing a handy man for that work. Finished (or old) houses fitted without defacing the walls.

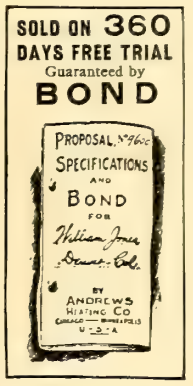
Special prices on estimates submitted at once, but the *contract must be closed within thirty days thereafter.* Delivery may be later.



How We Do Business

We furnish everything to make buildings "modern," selling "direct from factory to user." All material is prepared to be screwed together by any handy man. Skilled labor is not necessary in putting up Andrews Heating, Plumbing, Water Supply or Sewage Disposal Systems.

When you buy an Andrews System you get complete detailed engineering plans of building, grounds, as well as of apparatus. Material is all cut, threaded and reamed, shipped in bundles, boxed, ready to screw together, and, with our plans and directions, can be properly put together at less expense than when cut on the job. The radiators (70 per cent. of the weight) are shipped from the nearest distributing point. *We pay the freight.* We refer to thousands of our plants erected by handy men—business men, doctors, lawyers, preachers, etc.—and to satisfied customers in over 1200 cities and towns all over America. Every year we get more business from the recommendation of our old customers than from any other single source. Each job has individual engineering attention to the last detail.



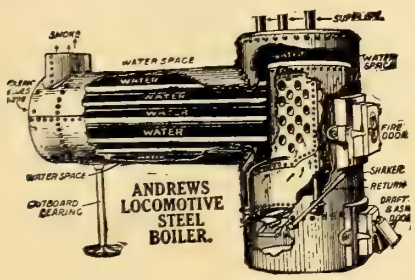
Sewage Disposal, $100

This System overcomes the main drawback to living in the suburbs or out in the country. A cesspool is no longer countenanced by modern sanitary standards.

The Andrews Sanitary Steel Septic System performs its work with bacteria and requires practically no attention; suitable for residences, factories, schools, etc. Built in variety of sizes of boiler steel, it is rivited and calked, air and water tight; fitted with trapped inflow, automatic outflow and suitable manholes. Sewage is harmful because it consists largely of decaying organic substances. The problem is to change organic to inorganic matter very rapidly. This is effected by the action of two classes of bacteria which in the process also destroy themselves.

The Andrews Boiler

burns any fuel with great economy. Its extra large heating surface gives the same heat with third less fuel. All boilers are built from 60,000-pound tensile strength steel, same as steam power boilers. Steam heating boilers made where special conditions require. Our rocking and dumping grate is easily operated and suited to different fuels.



Plumbing, $120

Porcelain enamel bath tub, 4½ ft. long with roll rim, nickel-plated trimmings, porcelain water closet, low down oak tank, seat and lid, enamel lavatory, enamel kitchen sink; 30-gallon kitchen range boiler; granitine laundry tray; vent and waste pipe, soil pipe, traps, bends and all material to erect complete. *There are no joints to wipe.* Complete plans and directions for erecting.

Main Building, University of Minnesota
Clarence H. Johnson, Architect

PRICES HERE QUOTED INCLUDE EVERYTHING

—all the little things (it is the little things that make the house cost more than a barn of equal size). We make no charge for our engineering knowledge and experience in heating, water supply and sanitary engineering, and unexcelled facilities for getting the raw materials at the right price—all put into your plans.

Air Pressure Water Supply $75

It takes the place of city water, all the comfort of a city home in the country; also fire protection, which reduces insurance. **The material** includes one 325-gallon tank, built of boiler steel, tested to an air pressure of 100 lbs; a double acting air-and-water, brass-lined force pump, with all trimmings, including water and pressure gauges, pipe and fittings to connect pump and tank, with complete plans and details for erection. All pipe is cut to fit. Estimates free.

Large Buildings

We solicit complete contracts for heating large buildings. We design, manufacture and erect high pressure or vacuum steam heating, hot blast ventilating, large hot water forced circulation plants, etc.

Heater Control

The Andrews Thermostat controls the fire by automatically operating the dampers and check drafts, keeping an even temperature. (70 degrees or any point desired). It saves fuel by checking combustion when the desired temperature is reached; put on any heating plant without defacing the walls. You fill up the fire and shake down the ashes morning and evening, the Andrews Control does the rest. Sold seperately for $20. Send for booklet.

SEND FOR OUR BIG 72-PAGE BOOK

on Hot Water, Steam and Hot Air Heating, Plumbing, Water Supply, Sewage Disposal, 300 illustrations. It is free for the names of two other persons going to buy hot water or other systems. Write today. Note above special prices. Address nearest office.

1080 Heating Building, MINNEAPOLIS **1080 Marine Building, CHICAGO**

Andrews Peerless Cast Iron Boiler

So strong is custom that we have found it good business to manufacture 12 sizes of high-grade sectional cast iron boilers. Full particulars in our catalog.

THE GREENHOUSE ORNAMENTAL

You will certainly admit that this one is attractive, and a long call between it and the uninteresting looking hot house of a few years back.

But there is a danger that in making greenhouses ornamental, their practical growing points will be sacrificed. Our experience, covering some twenty-five years or more, exclusively devoted to greenhouse designing and building is a guarantee that your house will be every way practical, yet still have the pleasing effect so indispensable for the private grounds. Send for our illustrated matter.

HITCHINGS & COMPANY

1170 BROADWAY, NEW YORK CITY

Why stir up the Dust Demon to Frenzy like this?

Which Do You Do In Your House—
PACK DIRT IN? OR LIFT IT OUT?

When you use broom or carpet-sweeper, you scatter a large part of the dirt over a wider area, to be rehandled again and again; but that is not all of the evil.

Another large part of the dirt you work deep down into the carpet, there to decompose and putrify, to become the breeding place of germs and insects and to fill the house with musty and sour odors.

With such primitive implements, you simply can't help it; for that is their **constant tendency**, the absolutely necessary result of the **downward pressure** exerted by their every stroke.

Every time you use broom or carpet-sweeper, your every effort drives dirt down into the carpet deeper and deeper, and steadily adds new layers, until the fabric is **packed.**

And that is why you have to renovate.

It is true that the Vacuum System of cleaning is the only absolutely dustless system; but a large part of its remarkable efficiency is due to the fact that its **constant tendency** is **exactly opposite** to that of broom and carpet-sweeper.

Whereas broom and carpet-sweeper pack in the dirt even more solidly, the Ideal Vacuum Cleaner **lifts out,** by its suction force, more and more dirt from lower and lower depths. This it does constantly and always.

In other words, Ideal Vacuum Cleaning removes all the dirt that has been ground into the fabric as well as that which lies loosely on the surface, undoing with every application the evil of broom and carpet-sweeper.

And that is why the Ideal Vacuum Cleaner renovates every time it cleans.

The Ideal Vacuum Cleaner

(FULLY PROTECTED BY PATENTS)

OPERATED BY HAND — **"IT EATS UP THE DIRT"** — OR ELECTRIC MOTOR

The **IDEAL VACUUM CLEANER** is the great Vacuum Cleaning principle brought to its ideal state of economy and efficiency and **made practical and possible for all.** Weighing only 20 pounds, it is easily carried about. Operated either by hand or little motor connected with any electric light fixture, it requires neither skill nor strength. Compared with sweeping it is no work at all.

There in your home the **IDEAL VACUUM CLEANER** stands working for you, raising absolutely no dust, scarcely making a sound. And yet, under the magic of its work, carpets, rugs, curtains, upholstery, etc., are made clean, wholesome and sweet **through and through.** Mysterious odors disappear, the breeding places of pests are removed, the destruction of fabrics is arrested, and the causes of disease are banished.

So tremendous is the saving effected by the **IDEAL VACUUM CLEANER**—in money, time, labor, health and strength—that it quickly pays for itself many times over. It is absurd to think that you cannot afford its small price. **How can you afford to be without it?** Try it and **you will be ashamed** of the conditions you have been living in.

Every machine is guaranteed.

Send today for our Free Illustrated Booklet. It tells a remarkable story that will mean **a new era** in your home.

The American Vacuum Cleaning Company
225 Fifth Avenue, New York City

PROBLEMS IN HOME FURNISHING

(*Continued from page xi*)

twenty to twenty-five dollars, a hem-stitched linen spread is recommended. In some rooms the white spread is too colorless, and figured cretonne, linen-taffeta, or linen is preferable to the plain color. Some of these materials may be had in fifty-inch widths, and fewer seams will then be necessary. It is better to place one width in the center of the spread, and add enough each side (matching the pattern, of course) to give the correct width. If a valance is to be attached to the bedstead, the spread need not hang as far over the sides as if there were no valance. The spread may have a cotton fringe of pointed braid, but the valance requires only a hem.

If the spread is made long enough it may be carried over the pillow, laid flat, and tucked down at the back. A piece of the cretonne of the same width as the spread, and put together in the same way, may be laid over the pillow as a separate cover. This gives better lines to the bed drapery than the spread and pillow cover combined.

For a very simple bed spread the dress dimities in white or in colors may be used. As these are not opaque, a lining of sateen or muslin will need to be laid under the material. If it is thought best to do without a valance, the dimity may be gathered around the edges of the top piece, making it deep enough to reach to the floor.

HALL DOORS AND SIDE LIGHTS

How to screen the hall from outside observation and yet make a good interior effect, is a problem that comes up nearly every month from one or more correspondents. The conditions vary in different homes. "The plate glass that is set in my front hall door," writes a suburban friend, H. G., "is so long that I despair of every being able to clothe it properly. This is the only lighting given to the hall, and I cannot keep the glass entirely covered; but it is too high to use a curtain shirred on a rod. At night, I want the protection of an opaque curtain. What would you suggest?"

In this particular instance an ecru net, shirred top and bottom on a small brass rod, will allow enough light to enter the hall, yet cover up the glaring expanse of glass during the daytime. Over this curtain a buff colored Holland shade may be put up and, at night, drawn down as a screen. This meets the utilitarian need as well as it can be done under the circumstances. When only a small door window is to be screened, a double set of vestibule rods may be fastened to the door on which a net and a silk curtain may be fastened. The silk should be in tone with the woodwork and the walls when this plan is followed.

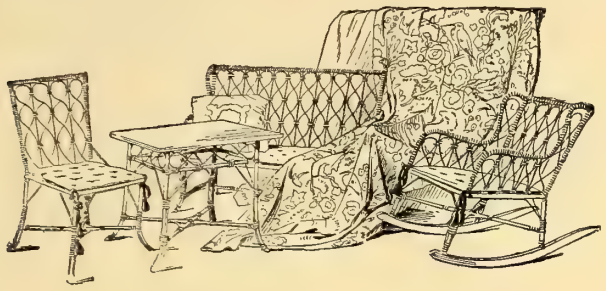
Side lights require the same general treatment as the glass that is set in the door. If a single material is desired a plain colored silk will best serve the purpose, or a silk in which both sides are alike. Some of the Japanese silks in conventional patterns are double-faced. The new sun-fast gauzes are economical for the glass in hall doors and side windows, as the exposure to the light quickly fades an ordinary silk.

NAME FOR A SUMMER COTTAGE

F. T. I. writes: "This may not be in line with your regular queries, but I would be glad to have some names suggested for my new cottage in the mountains. The family has thought of everything, but nothing seems quite to suit the place. Will you help us in this matter?"

Only a limited list can be given to this correspondent, as so little clue is given in the letter to the situation of the cottage. Perhaps something in the following names may be

FLINT'S FINE FURNITURE



Summer Furnishings of Reed, Rattan and Willow

Pre-eminently the ideal furniture for Summer homes and the seashore, particularly in the water-proof enamel finish of any color, which is impervious to climatic changes.

This season's styles in Chairs, Divans, Rockers, Settees, and Conversation Chairs are designed to admit the use of cushions, which we make to order at small expense from our stock of cretonnes, linen taffetas, and other fabrics suitable for seashore and veranda furnishing.

No other furniture so nearly approaches the acme of ease and cool comfort in the summer home.

We will, upon request, send competent artists to take entire charge of any decorative problem and submit sketches and estimates.

GEO. C. FLINT CO.

43-47 WEST 23rd ST. 24-28 WEST 24th ST.

Coldwell Lawn Mowers

Hand, Horse and Motor Power

are used by the New York City Park Department, the Capitol at Washington, and by many leading golf and country clubs and large estates of America

EXCLUSIVELY

Send for Catalogue

Coldwell Lawn Mower Company

20 Coldwell Street NEWBURGH, N. Y.

BOBBINK & ATKINS'

World's Choicest Nursery Products

It is advisable to order now to get your choice of our World's choicest Nursery products. Never before have we had a selection as handsome as we offer for planting this season. Intending purchasers will do well to visit our Nurseries to inspect our products. If you cannot, we shall be pleased to give prices on your list of wants for Spring planting.

ROSES. We have many thousands of two-year-old plants ready for shipment, consisting of all the most suitable for the American climate.

EVERGREENS AND CONIFERS. Many acres of our Nursery are planted with the most attractive specimens ever produced in this country. Our collection has been admired by visitors from all parts of the World.

PINES. We grow many thousands in all the most useful and striking kinds. No grounds are complete without a proper number of them, as they are healthful and add attractiveness to the Landscape.

RHODODENDRONS. Are among our specialties. Everybody intending to plant should certainly see our stock. We can give prices on large or small quantities in all the hardiest and most attractive varieties.

BOXWOOD. Our stock is probably unsurpassed, as we have thousands in all sizes suitable for Boxwood gardens.

TREES AND SHRUBS. Our Trees and Shrubs are hardy, vigorous and free from disease.

HEDGE PLANTS. We grow thousands for any kind of hedge desired.

VINES AND CLIMBERS. We have large quantities for every style of covering.

BAY TREES. The largest collection in this country in all sizes can now be seen in our storehouses.

OLD FASHIONED FLOWERS. For Old Fashioned Gardens, beds and borders. Many acres of our Nursery are planted with the largest and most complete collection in this country. Thousands of people visit our Nursery annually to see them when in bloom.

FRUITS. We can supply Trained, Dwarf and Ordinary Fruit Trees to make a complete fruit garden. In addition, we have a fine selection of all kinds of small Fruits, Strawberries, etc.

ENGLISH POT GROWN GRAPE VINES. We have an especially fine lot of these for early Spring delivery. Ask for list with prices.

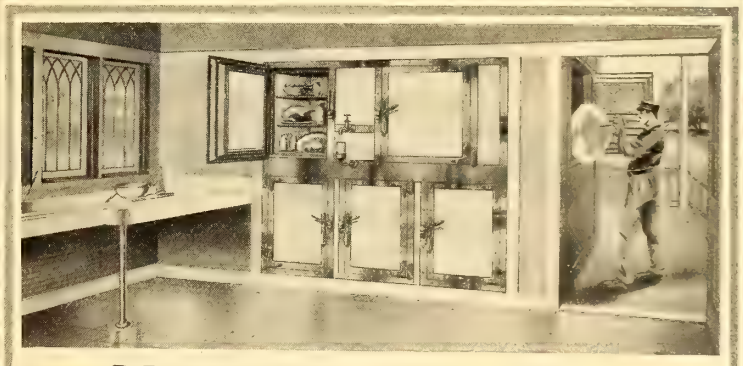
TUBS. We make them in all sizes and shapes for Plants and Trees.

Our ILLUSTRATED GENERAL CATALOG No. 90 will be mailed to prospective purchasers

VISIT OUR NURSERIES

NURSERYMEN AND FLORISTS

RUTHERFORD, N. J.



Make the Refrigerator a Part of Your House

Have it built to fit a particular space most convenient to pantries and kitchen—have the front of the refrigerator flush with the wall as shown above, and finished to match the interior trim—have it of the size and interior arrangement best suited to your needs—and provided with an extra door to the ice-chamber so that it can be iced from an outside porch.

McCRAY REFRIGERATORS

(Keep things fresh)

because the air in them is **purified** by constantly recurring contact with the ice, caused by the **"McCray System."** This also **dries** the air so that even matches or salt can be kept perfectly dry in this refrigerator.
Your choice of sanitary linings: **Opal-glass** (looks like white china—½ in. thick) **porcelain-tile, white enameled wood** or **odorless white wood.** No zinc is ever used, as zinc forms dangerous oxides that poison milk and other food. Can be arranged for icing from an outside porch if desired.

CUT DOWN YOUR ICE BILLS

McCray Refrigerators use less ice than other refrigerators, because McCray walls are the thickest and best "heat and cold proof" walls made.
McCray Refrigerators of all sizes and styles are ready for immediate shipment. Built-to-order refrigerators for any purpose can be shipped three weeks after order is received. Every McCray is guaranteed to give lasting satisfaction. Upon request we will send you one of our illustrated books which explains why McCray Refrigerators are better than other Refrigerators and **different** from ordinary ice boxes. Write a postal for catalog and full particulars while you think of it.

No. A.H.—Built-to-order for Residences.
No. 85.—Regular Size for Residences.
No. 66.—For Grocery Stores.
No. 47.—For Hotels, Clubs, Institutions, etc.
No. 58.—For Meat Markets.
No. 71.—For Florists.

McCRAY REFRIGERATOR CO., 887 Mill St., Kendallville, Ind.

More Than Soda Crackers

When you eat Uneeda Biscuit you taste something delightfully different from common soda crackers.

The difference begins with better baking of best materials, in the greatest, cleanest bakeries in the world, built expressly to bake Uneeda Biscuit.

The difference is protected and preserved for you by the only package in the world that effectively retains freshness and excludes all dust and moisture.

5¢

NATIONAL BISCUIT COMPANY

The SCIENTIFIC AMERICAN BOY

By A. RUSSELL BOND

12mo. 320 Pages. 340 Illustrations. Price, $2.00, Postpaid.

A STORY OF OUTDOOR BOY LIFE, suggesting a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. Complete practical instructions are given for building the various articles. The book contains a large number of miscellaneous devices, such as scows, canoes, windmills, water wheels, etc.

MUNN & CO. Publishers of "SCIENTIFIC AMERICAN" 361 Broadway, New York

Six Choice Hardy Shrubs ONLY 40c By Mail Postpaid

1 Hydrangea, Paniculata Grandiflora—handsomest shrub grown.
1 Spirea, Van Houtti (Bridal Wreath)—pure white flowers.
1 Snowball, Large Flowering—pure white flowers.
1 Barberry, Thunbergii—yellow flowers, brilliant berries.
1 Cornus Siberica (Red Branched Dogwood)—beautiful shrub.
1 Weigelia, Rosea—beautiful rose colored flowers.

For $1.00 We will send 1 plant each, *2 years old*, by express, at the purchaser's expense.

They are all perfectly hardy, and when established, will bloom on and on, year after year, with little or no attention, and make a handsome display of brilliant flowers every season.

Free Book of Northern Grown Seeds, Plants, Bulbs, Fruits, Shrubs and Trees.

L. L. MAY & CO., Seedsmen and Florists, ST. PAUL, MINN.

"MOST NORTHERN NURSERIES IN AMERICA"

appropriate, or a combination might be effected with different parts of two names:

Ski-hi, Edgehill, Up-e-nuf, Swallow's Nest, Star Rock, Edgewood, Fox Hill, Grey Mount, Greycote, Highfield, Highlands, Hillhurst, The Knoll, Roughlands, Six Gables, Stone House, Willow Heights, Windy Crest, Wildwood, Moss Hill, Overlook, Tip Top.

GARDEN WORK ABOUT THE HOME

(*Continued from page xi*)

In the present instance it is impossible to give E. H. any helpful advice without a topographic map of the place and a plan of the house.

How shall we know where to locate the house? Should it be near the river, and how near; and which way should it face, and where should the front door be?

What shall we have between the house and the river, lawn or garden, and is the boat house to be ornamental and part of the scheme, or is it to be hidden by planting?

The barns might be as far as possible from the house, with horses and cows and automobiles under one roof; or there might be two buildings, with a garage near the house and the horses and cows far away.

The size of the flower and vegetable gardens is another interesting subject for discussion, and the location of the tennis court or play lawn will need some thought.

The cost of keeping the place up is a question too little considered, yet the place may be so designed that one man can easily do it all or so that five men can scarcely begin to do it.

These questions seem as difficult as those asked by the insurance companies, yet they must be answered before the landscape architect can make a start even at locating the house.

The ideal way in building a country place is to employ architect and landscape architect at the same time. Tell them both what you want, and let them consult together about the arrangement of rooms, the location and orientation of the house.

Then when the architect has designed the house it is sure to fit the lot (they do not always when the architect works alone), and the entrances and rooms will be just where they should be. Then the landscape architect can do his part of the work, plan the drives, fore court, service court, terraces, clothes yard, and all the other features of the place, whether designed for utility or beauty.

With this fixed and definite plan the work on the grounds can be done as the house is being built, or before.

It is often possible to plant all the trees on a place years before the house is built, if the owner and architect get together and agree upon the general character of the house, and the arrangement of the grounds.

The landscape architect's plans will show all roads, with their elevations and changes in grade, all the gardens and all the detail of grading and planting.

It is quite possible to do this work little by little, so that it may not be finished for five or ten years, if that be desirable, yet the cost will not be much greater than if it were all done at once.

The aesthetic profits in employing a landscape architect are much better known than the practical advantages; which is unfortunate because many people consider the landscape architect a luxury, whereas his services should be as necessary as those of the architect.

Small House Number *of* American Homes & Gardens

APRIL, 1909

THE artistic and inexpensive house is the chief demand of the home seeker of to-day. For that reason the April, 1909, number of American Homes and Gardens will be a SPECIAL SMALL HOUSE NUMBER.

This issue will contain a vast amount of valuable information for the prospective home builder. It will tell him how to select a country site; how the various rooms of the house should be planned; the style of architecture in which the house should be designed; the material of which it may be built; the kind of plumbing fixtures to be used; the heating system to be selected; the choice of the hangings for the walls, doors and windows; appropriate furniture for the home; the interior decoration features of the home; and the planning and laying out of the grounds surrounding the house, as well as the planting of them.

The Artistic Expression of the Small House
Is well explained in an article by Francis Durando Nichols, illustrated with fifty engravings showing exterior and interior views and floor plans of a group of model houses of small size and small cost adapted to the purse of modest size.

Plumbing for a Small Country House
By John A. Gade, is a very important subject. No part of a house needs greater attention than the laundry, kitchen and bathroom. Hence the economic and convenient placing of the plumbing fixtures, the kind to use, and the cost of the same are matters of interest to all prospective home builders.

The Making of an Iris Garden
By Samuel Howe, is an illustrated article showing how a swamp or lowland can be developed and transformed into a beautiful iris garden.

Decorative Features in the Small Home
By Alice M. Kellogg, presents in a brief way, with ten illustrations, artistic schemes of covering the floors and walls of the house, harmonious and appropriate hangings for the doors and windows, with numerous suggestions for the decorating of the various rooms of the house.

A Group of Model Motor Houses for the Small Country Place
By Ralph de Martin, forms two pages of illustrations and sets forth the best designs for a small motor house suitable for the accommodation of one motor car and with sufficient space for a work bench.

Home-Made Novelties for the Country House
By Mabel Tuke Priestman, treats of the conversion of unlikely things into useful articles, and the illustrations show the results.

The Evolution of the Small House Plan
By Joy Wheeler Dow, is an important article by a well-known architect on the economic planning of a small house, costing from $2,500 to $8,000. The plan and the various arrangement of the rooms is the first thought given to the house and is one in which the layman should be most interested.

A Formal Garden and Pergola, designed by an Amateur
By Alexander R. Holliday, informs the reader how an amateur planned and laid out his garden and how he built his pergola. Illustrated with plans and scale drawings.

Proper Furniture for the Small House
By Esther Singleton, with illustrations showing the artistic and appropriate furniture for the house, and the proper position in which it is to be placed, together with an accurate treatment of the fireplace and mantel.

The Use of Concrete in the Building of a Small Country House
By Benjamin Howes, is a timely and comparatively new subject, and is one in which much interest is shown at the present moment. The article is profusely illustrated with fifty engravings showing exterior and interior views of floor plans of small houses of various styles of architecture in which concrete is used with artistic results.

The Heating Apparatus for the Small Country House
By Allyn Frogner, is the title of an article treating in a practical manner one of the most important features of a small country house. How to heat and what is the cost? That is a question which has been well answered for the three respective systems of hot air, steam heat, and hot water.

Problems in Planning the Grounds of a Small Country Place
By Charles D. Lay. Mr. Lay has explained in a very concise form how the grounds around a small country place may be planted at a very low cost, and enumerates the best and most effective shrubs and plants to be used.

This Small House Number
Will contain 165 illustrations covering 52 pages, which will be enclosed in a striking colored cover.

The price will be fifty cents. Those now subscribing for American Homes and Gardens for the year will receive it at the regular rate. Subscription price $3.00 per year.

MUNN & COMPANY, Publishers
361 Broadway, NEW YORK CITY

"Guaranteed"

Architects are cautioned that there are many guarantee labels being used on porcelain enameled iron plumbing fixtures, and that in accepting a ***guaranteed*** tub, it will be the part of caution to identify the firm issuing the guarantee label as to financial responsibility and record of having made good, in a broad way, all that a guarantee label both states and implies.

The WOLFF GUARANTEE is fifty-three years old, and during that time has made a reputation for itself unique in the relation of a manufacturer to his product.

The cost of tearing out and replacing imperfect plumbing fixtures is so great that a guarantee label must have a broader meaning on plumbing equipment than on any other branch of building equipment. The guarantee label that is not backed by reputation and undoubted financial responsibility is indeed an empty statement.

L. WOLFF MANUFACTURING CO.

Manufacturers of

PLUMBING GOODS EXCLUSIVELY

The only Complete Line made by any one firm

DENVER CHICAGO TRENTON

Showrooms: 91 Dearborn Street

BRANCH OFFICES:

615 Northwestern Building, Minneapolis, Minn.
Builders Exchange, Cleveland, Ohio.
1209 Scarrett Building, Kansas City, Mo.
Monadnock Building, San Francisco, Cal.
77 Richmond Avenue, Buffalo, N. Y.
1108-1122 Nicholas Street, Omaha, Neb.
327-328 Bond Building, Washington, D. C.

BUILDING A BEAUTIFUL HOME IS EASY

If you get the right plans from the right architect. It is not a matter of money, but of knowing how to design properly and plan economically. **I do this.** Buy my books and prove it, or write me about your special plans.

Picturesque Suburban Houses. By mail, $2.00. Distinctive designs for cement, stone and frame houses from $3000 up. Complete descriptions and estimates.

Book of Bungalows. By mail, $2.00. All new and artistic designs for one and one-and-a-half story bungalows, from $1000 up.

Picturesque Summer Cottages. Vol. 3. By mail, $1.00. Beautiful designs for stone or shingle homes, rustic summer cottages and bungalows.

Camps, Cabins and Shacks. By mail, $2.00. Forty unusual and practical designs. Over half of buildings to cost between $350 and $1000.

E. E. HOLMAN, - ROOM 14, 1020 CHESTNUT STREET, PHILADELPHIA, PA.

The Beauty of

Cabot's Shingle Stains

is more than "skin deep"

The colors sink into the wood and form no painty skin on the surface, but give soft, velvety effects that show the beauty of the grain; while the creosote thoroughly permeates the shingle and preserves it; "Wood treated with creosote is not subject to dry-rot or other decay."—*Century Dictionary.*

Samples on Wood and Catalog sent on request

SAMUEL CABOT, INC., Sole Mfrs.

131 Milk Street Boston, Mass.

Agents at all Central Points

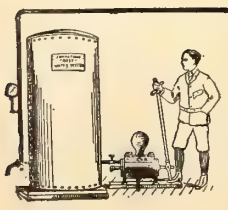
Maxfield Parrish's Residence, Cornish, N. H.
Stained with Cabot's Shingle Stains

A Garden of Hardy Flowers Three Months after we Planted it

Write for our Book **PLANTS AND PLANS FOR BEAUTIFUL SURROUNDINGS**

It is full of invaluable information, illustrations of flowers and beautiful lawns. It shows how the modest as well as the most extensive grounds can easily be made charming and attractive. There is nothing more pleasing and delightful to cultured taste than artistic and properly planted grounds. We grow and import all of the choicest hardy plants, shrubs, trees, box and bay trees for creating beautiful landscape effects in formal or natural landscape gardening. Write now lest you forget. It is free.

WAGNER PARK CONSERVATORIES, Box 424, SIDNEY, OHIO



OWN YOUR OWN WATER SYSTEM

The **Johnston "BEST"** Water System affords you every convenience and comfort enjoyed by people in the city,

It is an efficient fire protection, adds value to your property at small expense and cuts out water tax and labor. We deliver anywhere, freight prepaid.

Write us for complete literature and let us send you an estimate.

JOHNSTON MFG. CO. — WALNUT, KANSAS CITY, MO.

NEW BOOKS

THE WAY OF THE WOODS. A Manual for Sportsmen in Northeastern United States and Canada. By Edward Breck. New York: G. P. Putnam's Sons. Pp. 17+436. Price, $1.75 net.

Printed in a convenient form, with pages of small size and on thin paper, Dr. Breck's book is a veritable storehouse of useful knowledge for the practical guidance of the sportsman. It is, in fact, a practical field-manual, intended to form a part of the kit of every camper, fisherman and hunter. It contains concise yet thorough and authoritative information on every subject connected with life in the north woods, such as outfitting, fishing, shooting, canoeing, tenting, trapping, photography, hygiene, the protection of nature and many allied subjects. Its scope is, therefore, of the widest, and being based on extended personal experiences, it possesses the uncommon value of brevity and merit. A distinguishing feature is that the author not only tells his readers what they should have, but where to find it and what it costs. The latter item is likely to vary from time to time and with different localities, but this information is always extremely useful and convenient, and is immensely helpful in determining the cost of a projected trip. The author has been markedly successful in condensing his very broad subject without injuring the scope of his book. It is a book of distinctly practical value that even the expert sportsman will find helpful.

THE HOUSE DIGNIFIED. ITS DESIGN, ITS ARRANGEMENT AND ITS DECORATION. By Lillie Hamilton French. New York: G. P. Putnam's Sons. Pp. 13+157.

THERE has long been urgent need for just this book. Its aim is to tell the rich how they should design, furnish and decorate their houses, or rather how they should have all this work done for them. To a lesser extent it tells them what they should not have done, but that is too delicate a subject for even the graceful pen of this writer. As it is she has seen a lot of fine houses and been measurably impressed by what she saw. No one could possibly visit many houses of the very rich without feeling that here was a virgin field for suggestive criticism, and that if these worthy folk had but known how to spend the fortunes they lavish on their dwellings something very good, instead of merely something rich and lavish, might have been produced.

This book does not pretend to be a guide to house furnishing, although much of it is concerned with this subject. But it opens a welcome door, and the sane comments and suggestive criticisms of the author should go far in making rich people seriously consider their tables and chairs, their beds, candlesticks, rugs, and bric-a-brac. There are no complete descriptions of houses, but each chief room is considered by itself, and numerous examples and illustrations given for each. Nor does the author leave any doubt as to the kind of houses she herself is here interested in, nor the people she hopes to reach.. Her book deals exclusively with the costly house, and it is as an exponent of the costly life that she regards it. The book is charmingly done, written in

an engaging style, presented in a sumptuous dress, and makes a really earnest appeal to the people it undertakes to interest.

PRACTICAL FARM DRAINAGE. A MANUAL FOR FARMER AND STUDENT. By Charles Gleason Elliott, C. E. New York: John Wiley & Son. Second edition. Pp. 15+188. Price, $1.50.

The first edition of this valuable book appeared twenty-five years ago; it has now been entirely rewritten, with much new matter added, and has been modernized in every way. The author's principle appeal is to the farmer, and this is very direct and eloquent. He aims not only to discuss the value of the proper drainage of land, but to tell how it is done. In other words, any intelligent person, with the proper instruments, and this book as a guide, could himself find the necessary levels and make the required surveys for his land. There is much undrained land lying valueless in America, because the mere cost of finding out what to do seems too great. Mr. Elliott's book has, of course, its value for the engineer and surveyor, but his principal aim has been to show how the waste land may be made serviceable and profitable. His book is an eminently practical and useful one, and has distinguishing merits of brevity and directness.

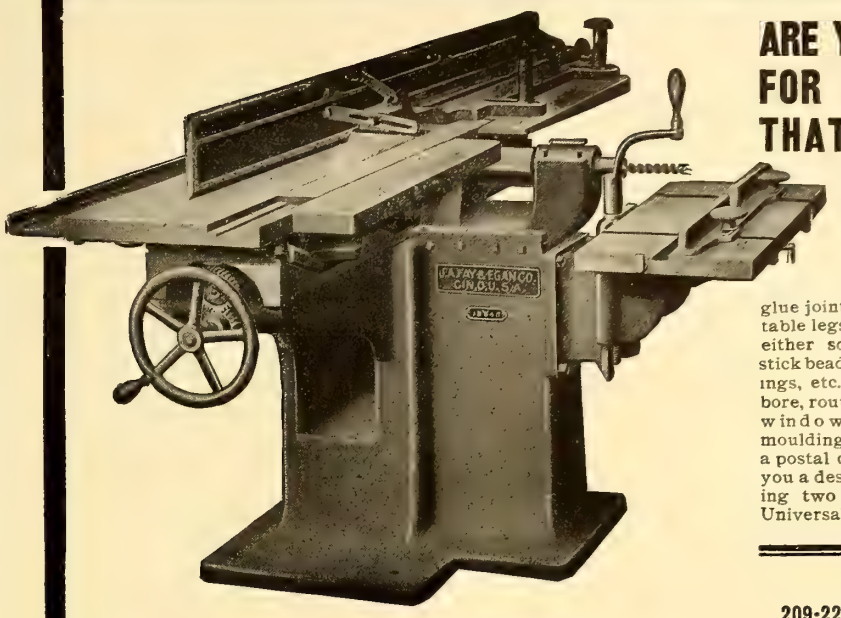
THE SMALL COUNTRY PLACE. By Samuel T. Maynard. Philadelphia: J. B. Lippincott Co. Pp. 320. Price, $1.50 net.

This is a very comprehensive book, dealing with a vast multitude of subjects, and dealing with them, for the most part, in a very able and helpful manner. It is true the view of the cement-concrete house made of hollow bricks is a peculiarly offensive structure in appearance, and not much can be said for the taste that determined the selection of several of the other houses shown; but in practical matters, in the way to do things, in telling how to do them, and in practical advice of every sort, Prof. Maynard is entirely at home, always suggestive, often authoritative, and ever welcome.

This book is, in fact, a true encyclopedia of information for the owner of the moderate-priced country place. The author has, for years, made an intimate study of the needs of just such people, and understands them thoroughly. He realizes, as every one must, that these are the people who need to know what to do and how to do it, and he sets about advising and directing them in the most direct way. His book is a model of its kind and his pages abound in home wisdom of the most valuable sort.

BACTERIA IN RELATION TO COUNTRY LIFE. By Jacob G. Lipman, Ph. D. New York: The Macmillan Co. Pp. 20+486. Price, $1.50 net.

If this book were to be generally read by the farmer and agriculturist, to whom it directly appeals, it would do an immense amount of good and be immeasurably valuable. Adequately illustrated and printed, and sold at a reasonable price, it offers nothing formidable save its stoutness, the considerable number of its pages, and its title to warn off the unwary reader. Yet it is a book of the utmost practical value, dealing with some of the weightiest of problems of life and agriculture; a book of practical methods and permeated throughout with a lofty sentiment of human betterment through the humble means of water and soil betterment. One may not easily look forward to the time when books of this kind will be in the hands of every farmer, but one may naturally wish that such days were not far distant. Meanwhile the scientific agriculturist must do the best he can and put all his available information into available form. Dr. Lipman has here made a notable



ARE YOU LOOKING FOR A MACHINE THAT WILL

plane out of wind, surface straight or tapering, rabbet door frames, rabbet and face inside blinds, joint, bevel, gain, chamfer, plow, make glue joints, square up bed posts, table legs, newels, raise panels, either square, bevel or ogee, stick beads, work circular mouldings, etc., rip, cross cut, tenon, bore, rout, rabbet, joint and bead window blinds, work edge mouldings, etc.? If so, drop us a postal card, and we will send you a descriptive circular showing two views of our No. 62 Universal Wood Worker.

Write
209-229 WEST FRONT STREET
J. A. FAY & EGAN CO.
CINCINNATI, OHIO

No. 62. UNIVERSAL WOOD WORKER

Refinish a Piece of YOUR Furniture at OUR Expense

Let us send the Materials Free

WE WANT a sample of wood finishing done with our preparations in your home. We will send the materials to do the work. Here they are:

A bottle of Johnson's Electric Solvo to quickly remove the old finish—

A bottle of Johnson's Wood Dye (you to choose the color from our 14 different shades) to color the wood—

A sample of Johnson's Prepared Wax to give that beautiful "hand-rubbed" effect—

And our illustrated guide book for home beautifying which includes complete color card and tells how to finish and refinish wood.

No doubt you have some piece of furniture that you prize highly, yet do not use on account of the worn condition of its finish, or because it does not harmonize with other furniture or decorations.

Use this outfit, which we want to send you free, for refinishing it, and you will be surprised to learn how easily the work is done and the beauty of the result.

May we send you these three packages, and the valuable six-color book, free at once? Learn from the test the beautiful effect obtained from the use of

Johnson's Wood Dye

It is not a mere stain. It is a deep seated dye—sinking into the pores of the wood and bringing out the beauty of the grain. When finished with Johnson's Prepared Wax you have a permanent finish of real beauty and most artistic effect. We want to give you these three packages at once. Send twelve (12) cents to partially pay cost of packing and postage—using coupon below for your convenience.

Johnson's Wood Dye comes in 14 Standard shades:

No. 125 Light Oak	*No. 130 Weathered Oak*
No. 123 Dark Oak	*No. 131 Brown Weathered Oak*
No. 125 Mission Oak	*No. 132 Green Weathered Oak*
No. 140 Manilla Oak	*No. 121 Moss Green*
No. 110 Bog Oak	*No. 122 Forest Green*
No. 128 Light Mahogany	*No 172 Flemish Oak*
No. 129 Dark Mahogany	*No. 178 Brown Flemish Oak*

Half-pints 30c; pints 50c. Johnson's Prepared Wax, 10c and 25c packages. Also sold in large sizes. For sale by all leading paint dealers. Send coupon today to

S. C. Johnson & Son, Racine, Wis.
"The Wood Finishing Authorities"

Please Use This FREE COUPON

I accept your offer and enclose twelve (12) cents to partially pay postage and packing on Free Booklet Edition A11-9, one sample bottle of Johnson's Wood Dye, shade No. ..... one bottle of Johnson's Electric Solvo, and a sample of Johnson's Prepared Wax.

Name .....
Address .....
I usually buy my paint at store of .....

Name .....
Address .....

Good heating—quick renting

The real reason back of many so-called renting bargains is usually summed up in two words—*poor heating*—due to old-fashioned methods. The house not well heated is surely *no home,* and its value and rental shrink with each rapidly moving tenant.

AMERICAN RADIATORS & IDEAL BOILERS

are being increasingly demanded by thousands who insist on being comfortably, cleanly, and healthfully warmed, without the toil and trouble caused by old-fashioned heating methods. IDEAL Boilers and AMERICAN Radiators will heat any building evenly and genially from top to bottom, and soon save enough in fuel, repairs, and household cleanliness to repay the cost of the outfit. These outfits for Hot-Water, Low-Pressure Steam, or Vacuum heating do not rust out or wear out—hence are lasting, paying investments—far better than bonds at 6%.

A No. 17-3-W IDEAL Boiler and 300 ft. of 38-in. AMERICAN Radiators, costing the owner $150, were used to Hot-Water heat this cottage.

A No. 3-22 IDEAL Boiler and 400 ft. of 38-in. AMERICAN Radiators, costing the owner $205, were used to Hot-Water heat this cottage.

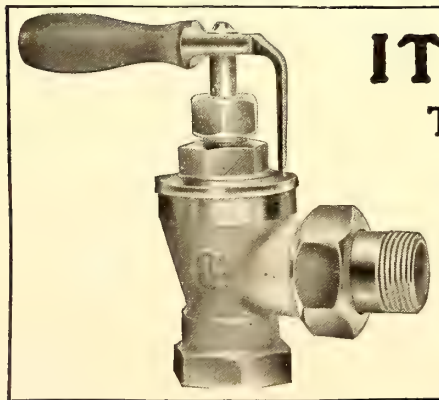
At these prices the goods can be bought of any reputable, competent Fitter. This did not include cost of labor, pipe, valves, freight, etc., which installation is extra and varies according to climatic and other conditions

Whether you are "moving in" or "moving out," whether landlord or intending builder, whether your building is OLD or new, *farm* or city, it will pay you well to investigate the particular merits of IDEAL Boilers and AMERICAN Radiators. Tell us of building you wish to heat. Our information and catalog (free) put you under no obligations to buy. Write today. *Prices are now most favorable!*

AMERICAN RADIATOR COMPANY

Write to Dept. 6 CHICAGO

Public Showrooms and Warehouses in all large cities of America and Europe.



IT SAVES COAL

The Gorton Quick-Opening Steam Radiator Valve

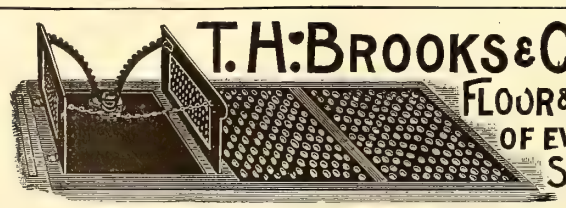
One-third of a turn of the lever handle will open or close the valve

ARE YOU INTERESTED?

Send for Circular and Prices

GORTON & LIDGERWOOD CO.

96 Liberty Street, New York City



T. H. BROOKS & CO. CLEVELAND, O.

FLOOR & SIDEWALK LIGHTS.

OF EVERY DESCRIPTION.

SEND FOR CATALOGUE.

WHERE THE GOOD TREES COME FROM.

Chestnut Grove Nurseries.

The hardiest, healthiest and best rooted trees, shrubs and roses to be found in America. Catalogue free.

E. S. MAYO & CO., ROCHESTER, N. Y.

Since 1880

Bound Volumes of American Homes and Gardens

Volume for 1905 $3.50

Volume for 1906 $5.00

Volume for 1907 $5.00

MUNN & CO., Publishers 361 Broadway, New York

contribution to scientific agriculture, and has produced a book that, while it requires careful study, will, in its practical application, prove of real and lasting benefit to those who may profit by it. His book epitomizes the whole of contemporary knowledge on this important subject to which it is a welcome and valuable contribution.

MAKING A COUNTRY HOME

(*Continued from page ix*)

are produced. It certainly is unnecessary to grow this delicious vegetable with only an inch or two of edible tips. For pieplant you can take either Linneus or Victoria—Mammoth is perhaps a little larger than Victoria, but neither of them are quite as rich flavored as Linneus. Everyone will need also a few herbs, according to his taste, and he will need parsley for garnishing. My choice among the herbs are sage and summer savory, the latter being a real addition to meats and soups. One or two pepper plants will be quite enough in any garden, but they are needed both for beauty and use.

In a Southern garden we come first of all upon sweet potatoes and cassava; although we grow in Florida every one of our Northern vegetables, in perfection—only we have to employ more mulch, and can never forget that the peas and potatoes are in more danger from heat than from cold. Sweet potatoes we plant in furrows filled with compost and covered with soil, so as to make ridges. This is the old Cracker way, and it is the best. Cassava is a beautiful plant standing four or five feet high, while the roots are tubers from one to three feet long. We also make much of eggplant and okra, both of which like a warm, sandy soil.

The vegetable garden should be a source of intellectual as well as bodily comfort, and should be as beautiful as a flower garden. In fact a good many of the vegetables, like curled leaved parsley, and some of the beets and carrots, have exquisite foliage. The vegetable garden also opens a splendid field for competitive tests. Growing two or three sorts side by side gives zest to the work, especially if the sorts are of your own producing. Then you run across a lot of problems as to the relative digestibility of different sorts of peas and beans and potatoes. You must learn to grow only the best things, and do it in the best manner. The vegetable garden affords an historical evolution collateral to that in the small fruit garden. Better sorts are created every year. Mr. Burbank began his career with the Burbank potato. As an economic problem the vegetable garden will give you about one-half of your living, and nearly the whole of it, if you have milk and eggs and butter and honey, and a wife who knows how to knead good-will and health into her bread. There is a lot in cooking, especially in cooking vegetables. You will need very little meat if you have a good garden, and you will be the better without it. I brought up my young folk meatless until they were seven years of age; then gave them their choice, but they all rejected it—yet they are stout, wholesome and intellectual.

NORWEGIAN TAPESTRY

Mrs. Oskar von Irgens Bergh desires us to state that the Norwegian tapestries illustrated in AMERICAN HOMES AND GARDENS for December, 1908, and which are referred to as having been woven by her, were both designed and woven by Madame Frida Koehler-Hansen, of Christiania, Norway. The latter, in the text, is referred to as the designer alone. —EDITOR.

The Paint That Wears Best—

How do *you* make sure you're getting the *right* paint? "They say," if you use White Lead and Oil you know just what's *in* your paint— But, there are a good many grades of white lead, and frequent adulterations.

Then there's boiled oil, and raw, cold-pressed, hot-pressed and steam-pressed; "aged" and "green" and a big difference in flax-seed, and danger of adulteration.

So, how are you going to *know?*

You *can't*—neither can your painter. Then, *after* you get your materials, you've got to take chances on *proper mixing*.

You can't be very cock-snre about that *kind* of paint.

But you can be absolutely sure of

Lowe Brothers High Standard Liquid Paint

All-ready-for-the-brush—

When you use Lowe Brothers High Standard Liquid Paint—you know far more about it than merely "what's in it,"—you can be absolutely sure of just what it will *do*—

It is a paint so perfectly *ground*—the oil and the pigments so perfectly *combined*—That it *works* better and *spreads* better—covers from 50 to 100 more square feet to the gallon—And *lasts* from two to four years longer than ordinary paints.

There's a High Standard Paint for every purpose—Linduro, Vernicol Enamel White and Interior Enamel are among them and are just what you need for beautiful rooms. Write for booklet—"*The Owner's Responsibility.*"

THE LOWE BROTHERS COMPANY
450-456 E. Third St., Dayton, Ohio.
Boston, New York, Chicago, Kansas City

MOTT'S PLUMBING

THE price of the enameled iron bath, porcelain lavatory and porcelain closet shown below is $84.85—an example of inexpensive Mott equipment. The illustration gives an idea of the beauty, and convenience of the fixtures which this Company, with its unequalled designing and manufacturing facilities, can offer those who prefer to limit expense.

A wide range of interiors from $85 to $3,000, is shown in our booklet "Modern Plumbing." Its value lies in its wealth of suggestions. In twenty-four different interiors you will see model arrangements of the newest types of fixtures in Imperial and Vitreous Solid Porcelain and Enameled Iron. Descriptions and prices are given; also new ideas in decoration and tiling.

"Modern Plumbing" will be sent on receipt of four cents, to cover cost of postage.

THE J. L. MOTT IRON WORKS
1828 *EIGHTY YEARS OF SUPREMACY* 1909
FIFTH AVENUE AND 17TH STREET
NEW YORK CITY

BRANCHES
Boston, Chicago, Philadelphia, Pittsburgh
Detroit, Washington, St. Louis, New Orleans, San Francisco and San Antonio
Canada: 83 Bleury Street, Montreal

Wrought Iron Fence and Entrance Gates

In harmony with house and grounds, improve the appearance of your home.

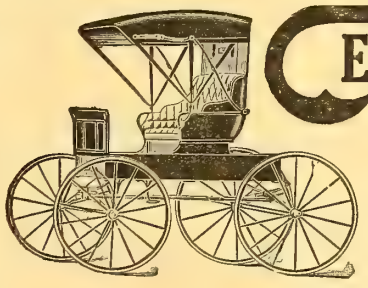
Stewart's are artistic, practically permanent, and are specified by leading architects. There are hundreds of designs to choose from—elaborate ones and many ***of small cost as well.*** State work desired, how much fence you want, number of gates, style of house, etc. We will submit designs or photographs and estimates, take measurements and erect if necessary. Satisfaction ***guaranteed.*** Also fountains, vases, settees, stable fittings, tree boxes, lanterns and ornamental iron.

Write for booklet. *Agents wanted.*

STEWART IRON FENCE

THE STEWART IRON WORKS CO.
1726 Covington St., CINCINNATI, O.

The LARGEST MAKERS of IRON FENCE in the WORLD



ELKHART BUGGIES

are the best made, best grade and easiest riding buggies on earth for the money.

For Thirty-Six Years

we have been selling direct and are

The Largest Manufacturers in the World

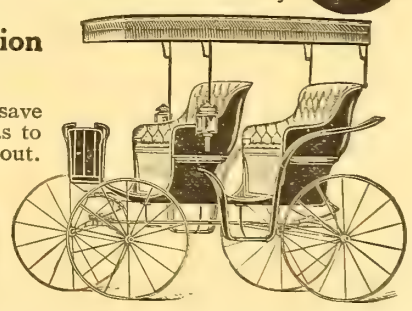
selling to the consumer exclusively.

We Ship for Examination and Approval

guaranteeing safe delivery, and also to save you money. If you are not satisfied as to style, quality and price you are nothing out.

May We Send You Our Large Catalogue?

Elkhart Carriage & Harness Mfg. Co.
Elkhart, Indiana



The expense and annoyance of painting will not recur every year or two if you use

DIXON'S SILICA-GRAPHITE PAINT

the "Proven Shield for Steel Work." Durability records in all climates; write for a few.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

Comfort—Grace—and Convenience

OLD-FASHIONED Morris Chairs (if they are built right, with good springs in the seat and back, and otherwise up to standard quality) are comfortable *when you get them fixed just right.* But when you're tired and want to rest, the trouble of "fixing them right" is a nuisance. It takes away half the satisfaction the chair should give.

"Push the Button-and Rest"

The "Royal" Chair

"The Push-Button Kind"

is the modern Morris chair, combining the utmost grace of design, materials of highest quality and superior workmanship, with the *special patented Royal push-button feature.* The push button, with the simple, sure mechanism which it operates, is the distinctive thing that puts the Royal Chair in a class all by itself as compared with the *very best* old-fashioned Morris chair.

In no other chair are comfort *and convenience* found combined. The "Royal" has no rod to fall out—you don't have to get up out of the chair to adjust the back. A little button, just under the right arm of the chair, does it all. By simply pushing the button you can move the back either up or down, as far as you wish, placing it in any one of nine comfortable and restful positions, and the back *stays* in the position placed, until the button is pushed again.

The push button is the exclusive, protected-by-patent "Royal" idea. It's *so good* that "Royal" Chairs are already in 200,000 American homes-beautiful, homes-comfortable.

The "Royal" trade-mark is on every "Royal" Chair. A guarantee of chair-quality, chair-comfort, chair-convenience.

"Royal" Chairs are Made in 85 Styles

in oak or mahogany—upholstered in fabric or leather, or with loose cushions—with or without footrest. They are sold in furniture stores nearly everywhere, and cost no more than the old-fashioned, *not*-convenient kind. Prices range from $10 to $50. Write today for fully illustrated "Royal" booklet and name of a dealer near you who sells the "Royal" Chair. Address

ROYAL CHAIR CO., 128 Chicago Avenue, Sturgis, Mich.

fNA
7100
A512
Hort.

SMALL HOUSE NUMBER

AMERICAN HOMES AND GARDENS

APRIL, 1909
Vol. VI., No. 4

MUNN & COMPANY, Publishers

PRICE, 50 CENTS
$3.00 A YEAR

A Stone House All in One Piece

THAT is, a concrete house. It is better in every way than a house built from stone, because stone is not plastic, whereas concrete, in its liquid state, can be easily shaped in every architectural form. But

the success of concrete construction depends on the quality of cement used

THERE is one name by which you can specify cement and be certain, and that is "Atlas"---the brand purchased by the Government for use in constructing the Panama Canal. Atlas is made in only one grade---the same for everybody.

Atlas Portland Cement is absolutely pure. Purity in cement is as important for concrete purposes as is purity of flour for baking purposes. Atlas Portland Cement is also uniform—another highly essential quality. If you want to get all that you know is possible from concrete construction, insist on Atlas Cement.

If you are considering the building of a home, let us send you our books on concrete home building:

"CONCRETE COUNTRY RESIDENCES," handsomely illustrated and unusually informing (delivery charges, 25 cents).

"CONCRETE COTTAGES" (mailed free).

"CONCRETE CONSTRUCTION ABOUT THE HOME AND ON THE FARM" (mailed free).

For the factory builder we have

"REINFORCED CONCRETE IN FACTORY CONSTRUCTION" (mailed for 10 cents).

THE ATLAS PORTLAND CEMENT CO., Dept. 10, 30 BROAD ST., NEW YORK LARGEST CAPACITY OF ANY CEMENT COMPANY IN THE WORLD — OVER 40,000 BARRELS PER DAY

ATLAS PORTLAND CEMENT

THE ATLAS PORTLAND CEMENT CO. PORTLAND ATLAS CEMENT 30 BROAD ST. NEW YORK

NONE JUST AS GOOD

SMITHSONIAN AUG 12 1985 LIBRARIES

Built to Burn

With truth these words might be written over the door of many a home in every city, town and village in this country. Safeguards against fire are simple and effective, yet few know about them or seek to take advantage of them. So that without the owner's knowledge, many a new house fair to look upon, is nothing better than a fire trap, literally inviting destruction.

The Hartford Fire Insurance Company, willing to serve property owners not only by paying indemnity after loss but by helping to prevent fire, has prepared by one of its experts a book, "Structural Safeguards for Dwellings." It ought to be in the hands of every man or woman who plans to build a house of any kind. It has valuable suggestions about certain simple precautions and features of construction —inexpensive ideas which, heeded in building, greatly reduce the chances of fire. If you expect to build a new house or remodel an old one, send for this book. It is free, and its suggestions may save life as well as property.

HARTFORD FIRE INSURANCE CO.
HARTFORD, CONN.

Send me your book "**Structural Safeguards for Dwellings,**" advertised in "American Homes and Gardens."

Name .....

Address .....

IN reproducing the quaint lighting effects of the Orient we know of none more beautiful than the Japanese lantern, in its soft harmonious colorings.

AS with these so with other lighting fixtures in Period, the ENOS conceptions notably conform in every case with the greatest exactitude to the style of decorations required.

THE ENOS COMPANY
MAKERS OF LIGHTING FIXTURES
Office and Factory: 7th Av. and 16th St. Salesrooms: 5 W. 39th St.
NEW YORK

Baltimore: 519 North Charles St.
Pittsburg: G. P. Norton 4th and Penn Sts.
St. Louis: N. O. Nelson Mfg. Co.
Seattle: Cox & Gleason 1914 Second Ave.
Chicago: W. H. Cowan & Co., 203 Michigan Blvd.
San Francisco: 1748 California St.
Toronto: 94 King St. West
Spokane: Cutter & Plummer, Inc.

WHY PAY RENT

Summer Cottages

when you can build such delightful cottages for so little?

O. S. LANG Summer Cottage Specialist

Designer and Builder of Attractive and Artistic Cottages and Bungalows to Suit Every Purse and Every Location.

¶ Send $1.00 for my set of 2 books full of handsome Cottage and Bungalow designs—Every plan a winner—result of 23 years' experience—The prices given in these books include all material and my personal supervision on the ground during construction—No extras—I go anywhere, and I am the only one who will. Begin now to get ready for next summer. Address

O. S. LANG, 693 Seventh St., Buffalo, N. Y.

Sample and Circular Free.

A House Lined with

Mineral Wool

as shown in these sections, is ***Warm in Winter, Cool in Summer,*** and is thoroughly DEAFENED. The lining is vermin-proof; neither rats, mice, nor insects can make their way through or live in it. MINERAL WOOL checks the spread of fire and keeps out dampness.

Correspondence Solicited.

U. S. Mineral Wool Co.
140 Cedar St., NEW YORK CITY.

ANDREWS, JACQUES & RANTOUL, Architects, Boston

DEXTER BROTHERS' English Shingle Stains

are cheaper than paint, for use on roofs and shingled surfaces, and will outwear paint or any other stain. Paint is bad for shingles for the reason that in drying it forms a skin coat at the base of the shingle which retains the water, thereby causing the shingle to rot from the under or unprotected side. Write for samples.

DEXTER BROTHERS COMPANY
209 Broad Street, BOSTON

AGENTS: H. M. Hooker Co., 128 W. Washington St., Chicago; W. S. Hueston, 6 E. 30th St., New York; John D. S. Potts, 218 Race St., Philadelphia; W. W. Lawrence & Co., Pittsburg, Pa.; F. H. McDonald, 619 The Gilbert, Grand Rapids, Mich.; F. T. Crowe & Co., Seattle, Spokane, Tacoma, Wash., and Portland, Ore.; Klatt-Hirsch & Co., 113 Front St., San Francisco, Cal.

BURLINGTON Venetian and Sliding BLINDS

Venetian Blind for inside window and outdoor veranda. Any wood; any finish to match trim.

SCREENS AND SCREEN DOORS

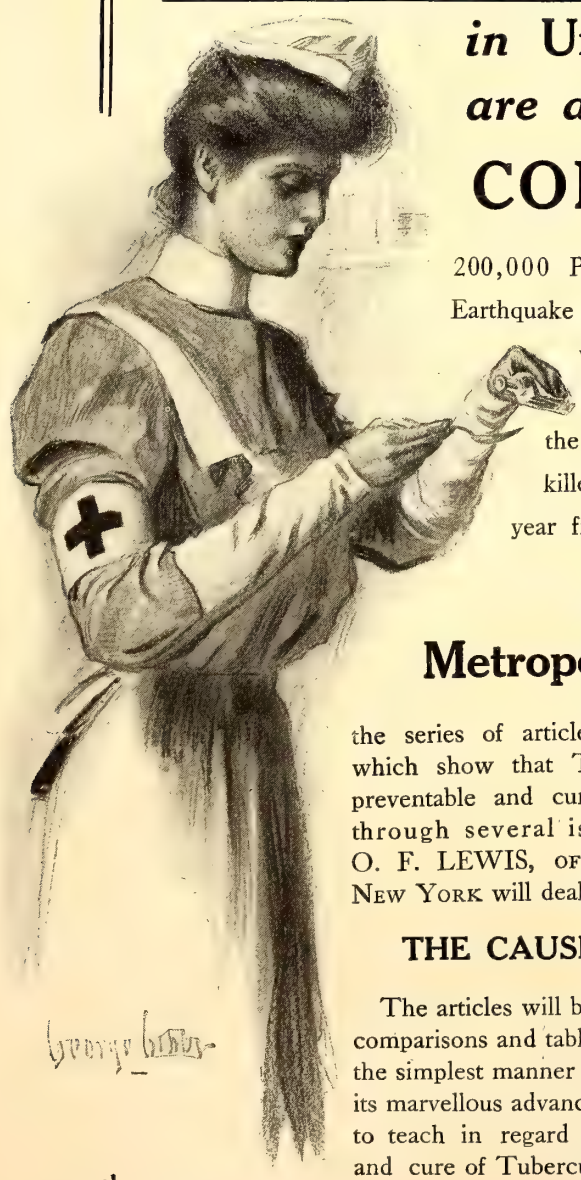
¶ Equal 500 miles northward. Perfect privacy with doors and windows open. Darkness and breezes in sleeping rooms.

Sliding Blinds for inside use. Require no pockets. Any wood; any finish.

WRITE FOR OUR CATALOGUE, PRICE-LIST AND PROPOSITION TO YOU

BURLINGTON VENETIAN BLIND CO., 975 Lake St., Burlington, Vermont

Eleven Per Cent *of the* Deaths *in* United States alone *are due to* CONSUMPTION



200,000 Persons were killed by the recent Earthquake in Italy, and the nations of the world are aroused to noble self-sacrifice in an endeavor to allay the sufferings. Yet fully as many are killed here in United States alone each year from Tuberculosis. Think of it!

Read in the

Metropolitan Magazine

the series of articles which has been prepared and which show that Tuberculosis is a communicable, preventable and curable disease. The series will run through several issues. The first, in APRIL, by O. F. LEWIS, OF THE CHARITY ORGANIZATION OF NEW YORK will deal with

THE CAUSES OF CONSUMPTION

The articles will be fully illustrated with striking charts, comparisons and tables, and will convey to the reader in the simplest manner all that modern medical science with its marvellous advancement of the past few years is able to teach in regard to the cause, prevention and cure of Tuberculosis.

CONSUMPTION CAN BE AVOIDED AND CURED

Place Your Order for the Entire Series at once.
The APRIL Issue will be quickly sold out.

THE METROPOLITAN MAGAZINE
3 WEST 29th STREET, NEW YORK CITY

OLD COLONIAL SNAP TABLE— **$10**

Solid mahogany, oval top 27x16 in., 27 in. high, beautiful dull finish, hand carved pedestal and claw and ball feet. Can be used for cards, tea, bedside, parlor or smokers' table, etc. I make Highboys, Lowboys, Sofas, Secretaries, Sideboards, Tables, Chairs and Colonial Reproductions of *all* kinds at *lowest prices*. Write me what you want and I will send cuts and prices.

PETER EMERSON, 1110 Old South Building, Boston, Mass.

Van Dorn Iron Works Co.

PRISON, HOUSE & STABLE WORK

JOIST HANGERS
LAWN FURNITURE
FENCING, ETC.

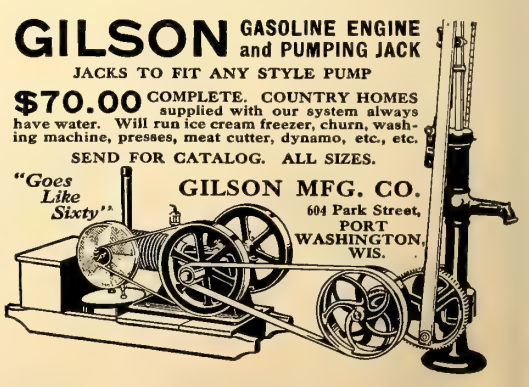
CLEVELAND, OHIO

GILSON GASOLINE ENGINE and PUMPING JACK

JACKS TO FIT ANY STYLE PUMP

$70.00 COMPLETE. COUNTRY HOMES supplied with our system always have water. Will run ice cream freezer, churn, washing machine, presses, meat cutter, dynamo, etc., etc.

SEND FOR CATALOG. ALL SIZES.



GILSON MFG. CO.
604 Park Street,
PORT WASHINGTON, WIS.

PREVENTS DRAFTS, DUST AND WINDOW RATTLING.

IVES' PATENT Window Stop Adjuster.

HEAVY BED

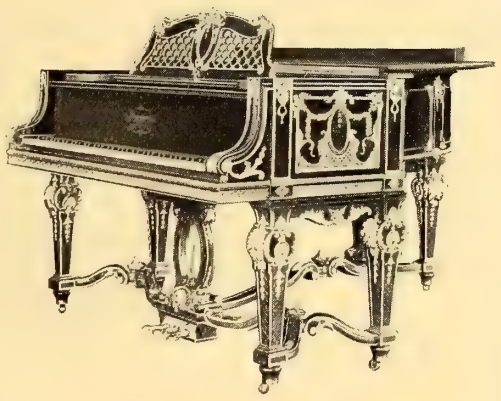
PATENTED.

The only Stop Adjuster made from one piece of metal with solid ribs and heavy bed that will not cup, turn or bend in tightening the screw. Manufactured only by **The H. B. IVES CO.**, New Haven, Conn., U. S. A. (Fifty-page Catalogue Mailed Free.)

IN the designing and manufacture of Period and Art cases to harmonize with any plan of architecture or decoration, Steinway & Sons are the recognized leaders, as in all other departments of piano making—a distinction they have enjoyed for three generations. Every

STEINWAY
ART PIANO

is a true representation of its respective period—a veritable gem of beauty and perfection. A visit to the Steinway Studios will reveal that, in these masterpieces of pianocraft, music and decorative art are so deftly blended that they at once command the admiration and praise of architect, artist and connoisseur.



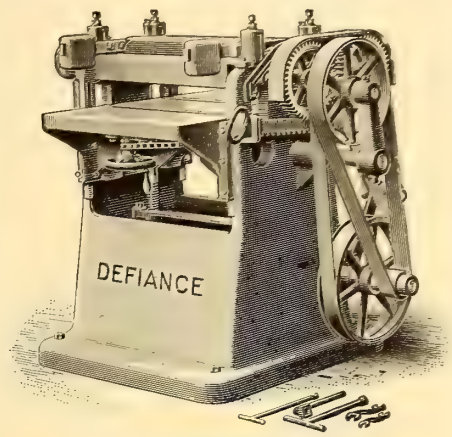
Steinway Parlor Grand Piano in the period of Louis XIV, gilt and enameled

STEINWAY & SONS
Steinway Hall
107-109 East 14th Street, New York
(Subway Express Station at the Door)

"DEFIANCE"
Wood-Working Machinery

For Pattern Shops and
General Wood-Work

Invented & Built by
THE DEFIANCE MACHINE WORKS
DEFIANCE, OHIO



24-Inch Single Surface Planer

Terra Cotta & Pottery
for Garden and Home

OUR collection of garden pottery includes reproductions of the antique and many exclusive designs in ***sun dials, flower pots, vases, benches*** and other garden furniture. Terra Cotta is strong and durable. Our prices are reasonable.

Send for Booklet showing choice selection of our work

William Galloway
3222 Walnut Street PHILADELPHIA

Water, Always Fresh

ALONG with the great necessity and convenience of running water in a country home, goes the equally important necessity that the supply furnished be pure and fresh. From a sanitary standpoint the importance of this cannot be overestimated; it means the difference between sickness and health. Fresh water can only be had with an easily regulated source of supply. With a wind-mill the quantity of water in a tank cannot be regulated. On windy days the tank will get so full, that, for days or weeks, only stagnant water runs from the faucets. Stagnant water collects germs, becomes brackish, and has an odor which discourages its use; it is really dangerous. On the other hand, with a HOT-AIR PUMP you can pump a supply when you want it—as much or as little as may be needed, thus your supply is fresh every day. Water is something which comes into such frequent use for so many purposes, that its quality naturally requires safeguarding just as carefully as that of your food supply; if it be kept fresh and pure, you are, in a large degree, insured against disease. The Hot-Air Pump, once installed, lasts a lifetime.

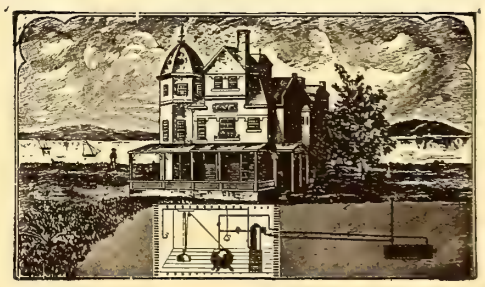
Be sure that the name "REECO"-RIDER or "REECO"-ERICSSON appears upon the pump you purchase. This name protects you against worthless imitations. When so situated that you cannot personally inspect the pump before ordering, write to our nearest office (see list below) for the name of a reputable dealer in your locality, who will sell you only the genuine pump. Over 40,000 are in use throughout the world to-day.

Write for Catalogue E, and ask for reduced price-list.
(Also builders of the new "Reeco"-Electric Pump)

RIDER-ERICSSON ENGINE CO.

35 Warren Street, New York
239 Franklin Street, Boston
40 Dearborn Street, Chicago
40 North 7th Street, Philadelphia
234 Craig Street West, Montreal, P. Q.
22 Pitt Street, Sydney, N. S. W.

Hot-Air Pump



THE most modern, and best illuminating and cooking service for isolated homes and institutions, is furnished by the **CLIMAX GAS MACHINE.**

Apparatus furnished on **TRIAL** under a guarantee to be satisfactory and in advance of all other methods.

Cooks, heats water for bath and culinary purposes, heats individual rooms between seasons—drives pumping or power engine in most efficient and economical manner—also makes brilliant illumination. **IF MACHINE DOES NOT MEET YOUR EXPECTATIONS, FIRE IT BACK.**

Send for Catalogue and Proposition.

Low Price Better than City Gas or Electricity and at Less Cost.
Liberal Terms

C. M. KEMP MFG. CO.
405 to 413 E. Oliver Street, Baltimore, Md.

THE KEWANEE SYSTEM OF WATER SUPPLY

The Advantages of a Good Water Supply

always possible with the

Kewanee System of Water Supply

Plenty of water at an even temperature, under good strong pressure, delivered to all parts of the house—bath-room, kitchen, laundry, etc.,—to the barn, garden, lawn—anywhere.

Running water, ready for use at all times. All the conveniences and comforts of the best city water work system are at your service if you install the

Kewanee System of Water Supply

With the Kewanee System there is no elevated or attic tank exposed to all extremes in weather conditions. No freeze-ups in winter and no warm stagnant water in summer. Instead, a **Kewanee Pneumatic Tank** is located in the **cellar**, or buried in the **ground.** It cannot leak, freeze, overflow or collapse.

Pump the water from your well, cistern or other source, into the tank; and it will be delivered to the fixtures and hydrants under **air pressure.** First class fire protection assured for your buildings.

Over 9000 Kewanee Systems in operation, supplying water for country and suburban homes, farms, schools, public and private institutions, etc.,—over 9000 water supply problems solved with absolute success.

The Kewanee System is the **original** water supply system, involving the use of **air pressure** instead of gravity pressure. There are imitations now—avoid them. Get the genuine and you will take no chances—we guarantee that. Look for our trade-mark KEWANEE and name plates on tank and pumping machinery.

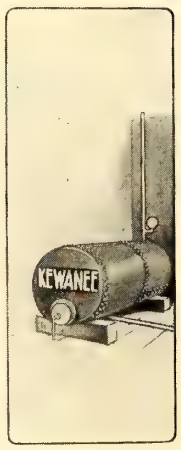
Kewanee Pumping Outfits

Kewanee pumping outfits are furnished for any special pumping requirements. The same technical skill and practical knowledge required to develop and perfect complete Kewanee Systems, are devoted to the solution of individual pumping problems.

No charge for expert engineering service. Let us help you solve your water problem. Write for our 64-page illustrated catalogue No 36. . It is free.

Kewanee Water Supply Company, Kewanee, Illinois

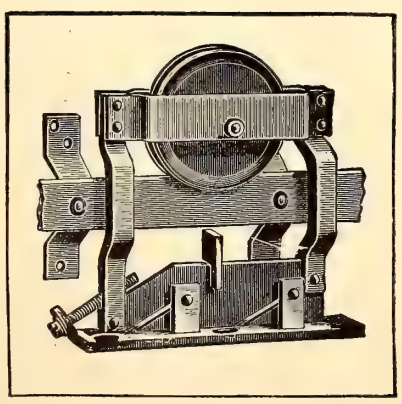
1566 Hudson-Terminal Bldg., 50 Church St., New York City, N. Y.
1212 Marquette Building, Chicago, Illinois.
305 Diamond Bank Building, Pittsburg, Pa.

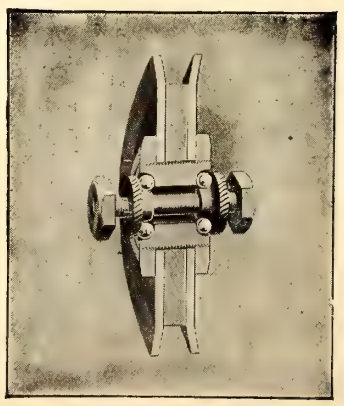


"LANE'S BALL-BEARING"

is the

Best House-Door Hanger Made





Other Styles for Less Money Sold by Hardware Trade Send for Catalog

Lane Brothers Company, 434-466 Prospect Street, Poughkeepsie, N.Y.

THE HEATING APPARATUS FOR THE SMALL COUNTRY HOUSE

By Allne Frogner

IT is difficult to offer advice as to what method of heating a country house is best, or cheapest, or most suitable. Experts differ in their recommendations for the same problem. It may be either heated by a furnace, by a steam plant, or by hot water. I believe that for the average unpretentious country house, the old-fashioned furnace, or rather new-fashioned furnace, is advisable. Its defects may almost entirely be counteracted by a little foresight and intelligent care. A furnace can comfortably take care of a country house, in an exposed location, of dimensions about twenty-five by fifty-five, or thirteen hundred and seventy-five square feet, with a cellar and two and a half stories above.

It is cheap—its initial cost is very much less that any steam or hot water plant that might be installed. A cottage costing, say, five thousand dollars can have a good furnace installed for one hundred and seventy-five to two hundred and fifty dollars; one that costs ten thousand dollars, a furnace for three hundred and fifty dollars. The furnace must never be an after consideration—for a great part of its success depends upon its having been carefully located at an early stage of the planning of the house. It consists of a stove usually encased in iron. Fresh air is introduced near its foot, passes over the heated surface, and is carried by pipes up and around to the various distributing points, where it is admitted through the registers. Locate the furnace properly, naturally in the cellar, and near the middle of the house, or, even better, a little toward the quarter from where come the prevailing cold winds, so as to heat the colder portions of the house equally with the more protected ones. The cellar should not be less than seven feet six inches in the clear, and much better eight feet, so there not only is plenty of room for the furnace, but also for the proper rise of the pipes leading from it to the various ducts going through the house.

As the air which comes from the furnace not only is for heating purposes, but also is breathed, a furnace should always be provided with fresh air, taken through a duct from one of the cellar windows or inlets on the side of the prevailing cold winds; more preferably from two, on opposite sides communicating with each other, and both controlled by dampers, so that the fresh air intake may be controlled according to the severity of wind and weather. A very little care in the regulation of the dampers will teach their use. The mouths of the cold air ducts should be made as nearly tight as possible, so as not to admit dust for distribution throughout the house.

From the top of the furnace pipes lead to the various ducts rising to the rooms above. The shorter the runs of these pipes or "leaders" in the cellar ceiling can be made the better. They should be sloped at least one-half inch to every foot, and should be round, allowing the least friction to the air, about fourteen inches in diameter, of IX tin or sufficiently heavy so as not to rust, and, if possible, wrapped with an asbestos paper. Smoke and gas may be sent up the furnace flue, if close to the furnace, and the connecting or smoke pipe properly run. The galvanized iron smoke pipe should not be less than what is known in the trade as "sixteen gauge"—even better "fourteen." The flue itself should be surrounded on all sides by eight inches of brickwork (country contractors will often assure you that four inches is "perfectly safe"), and should further be lined with terra cotta. Its size should be eight inches by twelve inches.

The "leaders" connect with the registers of the first floor and the vertical tin pipes or

"ducts" which ascend to the upper floors. The latter must, if possible, be kept from the outer walls, and be run in the interior partitions. If run outside, the air which the pipes carry will be cooled prior to reaching its destination. The ducts should have one dimension, about three and three-quarter inches, so that they may be placed between the two-inch by four-inch studs, and the whole surface evenly lathed and plastered. In front of the ducts insist upon expanded metal lath instead of the wooden lath of the remainder of the wall surface. Best of all is to have a double duct, the slight air space between the inner and outer duct acting not only as an excellent non-conductor, but the double pipe being an additional protection against fire and saving many a wallpaper from fading where the hot air duct ascends.

Each register and room should have its own separate duct. Having several registers in rooms above each other, fed by the same pipe, is never satisfactory. The placing of the registers is important. Do not place them in front of a fireplace or under or in front of a window. They are best placed in the low portions of the wall. In the floor they are never pleasant to walk upon—they are in the way of rugs; dust and dirt are swept into them, which again is blown up into the rooms by the hot air and rebreathed. Set them in double boxes and in slate or soapstone frames.

House-builders very frequently ask the question, "How large a furnace shall I purchase, and where shall I purchase it?" An architect, or the future owner, may easily calculate the cubical contents of his house, and turn to the manufacturers' catalogue and find what size and cost of furnace will heat the given multiple. The proper heating of the cubical contents is, however, very dependent upon the amount of glass surface, the exposure, and the construction of the walls. It is thus better rather to specify the make of the furnace and to demand that the heating contractor shall provide a furnace and run pipes sufficient to heat all portions of the house in zero weather to an even temperature of, say, seventy degrees. Procuring a furnace of an excellent make, and one, above all, having sufficient radiating surface, is most important. It should never be complicated. If it is simple, it is easy to run, easy to clean, and it affords good ventilation and general satisfaction.

The steam and hot water plant are to the furnace what the automobile is to the horse. One meets the greater demands in place of the older or more modest ones. Both of the newer systems may be subdivided under various special headings, but as the more complicated and perfect systems are considerably more expensive, they can merely be considered where the whole problem of the house is elaborate and costly.

As the hot air plant may be divided into furnace, ducts and registers, so steam and hot water plants may be divided into boiler, piping and radiators. The last two systems are very similar in their general construction and working. In a steam plant the steam evaporated in the boiler is carried from the main or distributing pipe through the various supply pipes to the radiators. As the steam ascends it cools and condenses, whereupon it returns by its own gravity to the boiler, either through the same pipe along which it ascended (single pipe system) or through a separate return pipe (two pipe system). In a hot water plant the whole system, boiler, pipes and radiators, is completely filled with hot water. The heated water expands and rises through the main flowpipe above the boiler, up through the circulating pipes to the radiators, gradually giving out a portion of its heat; the water in the pipes cools and returns again down through

(*Continued on page xx*)

JAPANESE IRIS

Japanese Iris at Andorra

FLEUR-DE-LIS of the French, and Iris of our gardens, are admirable hardy border plants. There are varieties and colors innumerable in flowers large and handsome, exhibiting beautiful shades and variations. The great group of

Japanese Iris
(*Iris laevigata*)

are fine border plants, flowering in June and July. In congenial situations they grow 3 to 3½ feet and on stems 3 to 4 feet long, produce flowers from 10 to 12 inches in diameter, and delicate as orchids. Colors are brilliant and striking, in shades of blue, purple and red; white marked with shades of these colors, and yellow, and pure white. We can select varieties to cover the full blooming period.

STRONG PLANTS
25c. each, $2 per 10, $15 per 100

Those interested in collections of Japanese Iris and other perennial plants, will find our *Calendar of Perennials* of great value in their garden work.

Our Spring Price List of Andorra Crown Ornamental Trees and Shrubs is now ready and should be consulted before placing your Spring business.

ANDORRA NURSERIES

WILLIAM WARNER HARPER, Proprietor

CHESTNUT HILL, PHILADELPHIA, PA.

This FREE BOOK means a Healthfully and Economically Heated Home — Send for Your copy - It's Free!

Planning or Building a Home?

Investigate carefully the methods of hygienic heating and ventilation, especially the

KELSEY Warm Air Generator

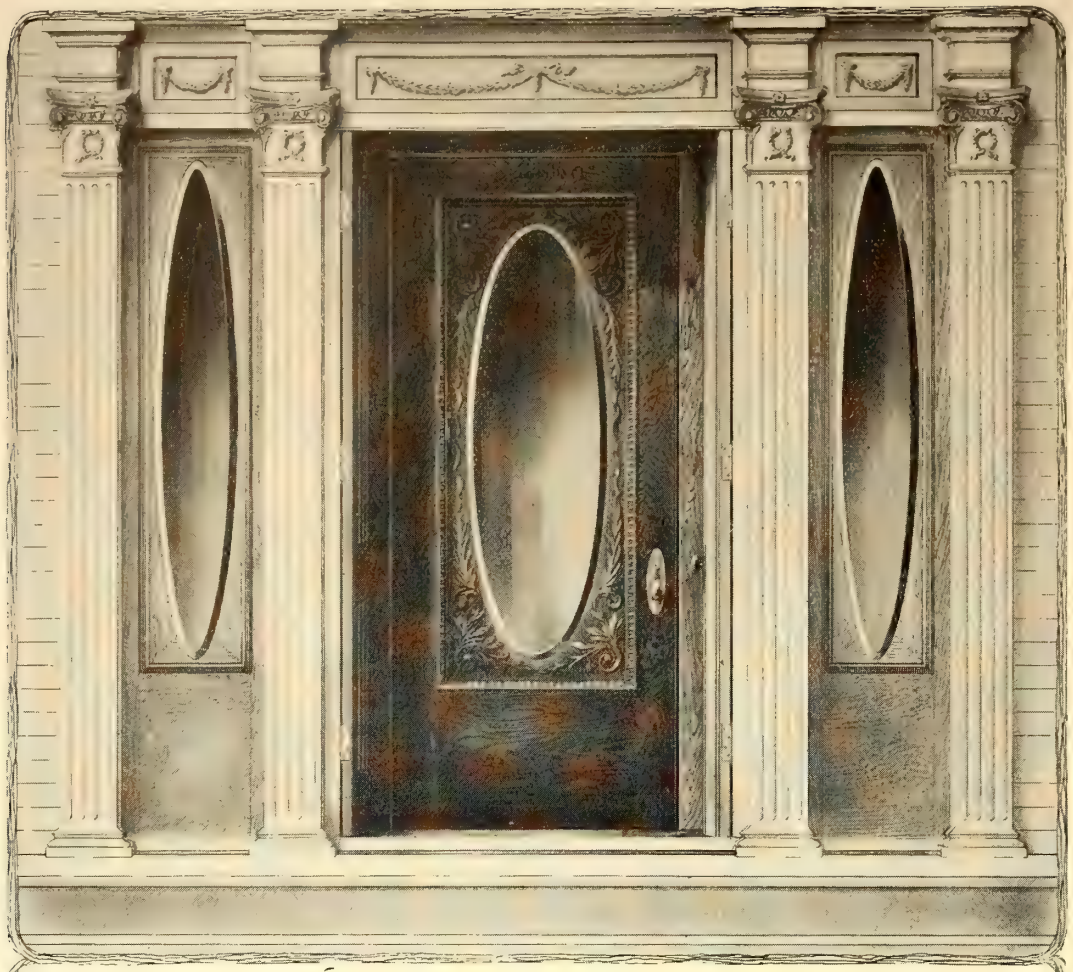
for it is the only system that heats every room alike, economically, and also furnishes an abundance of fresh, pure air. So little can be told about it here that we earnestly request you to send **today** for this instructive book "The KELSEY Generator," for it is worth having and keeping.

Over 35,000 KELSEY Generators are giving perfect service in American Homes, Schools and Churches. Why not in yours?

Our Book "Opinions" illustrates 250 elegant homes. It will help you with yours. Mailed for two 2c. stamps.

There is probably a KELSEY Dealer in your locality. KELSEY Dealers are reliable and know how to install heating systems properly. We will furnish plans, specifications and estimate of cost through the nearest dealer.

Kelsey Heating Co., 64 E. Fayette St., Syracuse, N. Y. 154-L Fifth Ave. New York City



The Colonial Entrance

The correct design, beautiful finish, and durable construction of the Morgan Colonial Door makes the Colonial entrance an artistic and practical success.

MORGAN DOORS

are perfect doors, built of several layers with the grain running crosswise, making shrinking, warping or swelling impossible. Veneered in all varieties of hard-wood—birch, plain or quarter-sawed red or white oak, brown ash, mahogany, etc.

Morgan Doors are light, remarkably strong and absolutely perfect in every detail of construction.

Each **Morgan Door** is stamped "*Morgan*" which guarantees quality, style, durability and satisfaction.

In our new book—"*The Door Beautiful*"—**Morgan Doors** are shown in their natural color and in all styles of architecture for interior or exterior use, and it is explained why they are the best and cheapest doors for permanent satisfaction in any building. A copy will be sent on request.

Architects: Descriptive details of Morgan Doors may be found in Sweet's index, pages 678 and 679.

Morgan Company, Dept. A, Oshkosh, Wisconsin.

Distributed by

Morgan Sash and Door Company, Chicago, Ill. **Morgan Company, Oshkosh, Wisconsin.** **Morgan Company, Baltimore, Maryland.**

WRITE FOR OUR BOOK

Plants and Plans for Beautiful Surroundings

It is full of invaluable information, illustrations of flowers and beautiful lawns

It shows how the modest as well as the most extensive grounds can easily be made charming and attractive. There is nothing more pleasing and delightful to cultured taste than artistic and properly planted grounds.

We grow and import all of the choicest hardy plants, shrubs, trees, box and bay trees for creating beautiful landscape effects in formal or natural landscape gardening.

Write now, lest you forget. It is FREE

WAGNER PARK CONSERVATORIES

BOX 425 SIDNEY, OHIO

ANNOUNCEMENT

F. E. CARPENTER CO.

Manufacturers and erectors of high-grade *Wrought Iron Railings & Wire*

FENCES

have removed their offices to the *Postal Telegraph Building 253 Broadway, New York City*

Correspondence solicited — Catalogues furnished

SPECIALTIES

Tennis Court Enclosures, Unclimable Wire Mesh and Spiral Netting (Chain Link), Fences for Estate Boundaries, Industrial Properties, etc.

Country Homes

may enjoy city comforts and conveniences *at less cost* than Kerosene, Acetylene or Electricity, with none of their dangers, by using the ***Automatic***

Economy Gas Machine

Produces light, kitchen and laundry fuel. Lighted the same as electric, but without batteries. Write for booklet, "***The Economy Way.***"

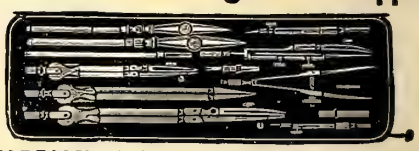
ECONOMY GAS MACHINE CO., Sole Mfrs.,
437 Main Street East, Rochester, N. Y.

St. Louis, Mo. Baltimore, Md.

F. Weber & Co.

1125 Chestnut St., Philadelphia, Pa.

Architects' and Engineers' Supplies



"FABRIANO" Hand-Made Drawing Papers
Superior to any other hand-made paper

F. Weber & Co.'s Illustration Boards, Air Brushes and Materials

STEEL CEILINGS

For Effectively Decorating All Kinds of Rooms

YOU CAN GET THEM IN

"BERGER'S" Classik

Appropriate Designs for Residences, Business Rooms, Auditoriums, Etc.

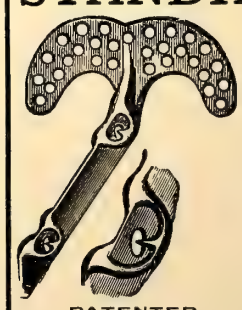
¶ Largest and most complete line of artistic STEEL Ceilings in existence. Covers the field so completely you can get just what is required, whether bold or elaborate designs or something comparatively simple.

¶ Before buying a Steel Ceiling of any description, get full details of Berger's "Classik."

ASK FOR CATALOG D-64

The Berger Mfg. Co., Canton, Ohio New York Philadelphia Boston Chicago St. Louis Minneapolis San Francisco Atlanta

STANDING SEAM ROOF IRONS



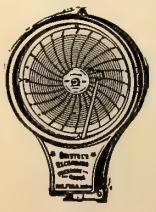
PATENTED

CLINCH right through the standing seam of metal roofs. No rails are needed unless desired. We make a similar one for slate roofs.

Send for Circular

Berger Bros. Co.

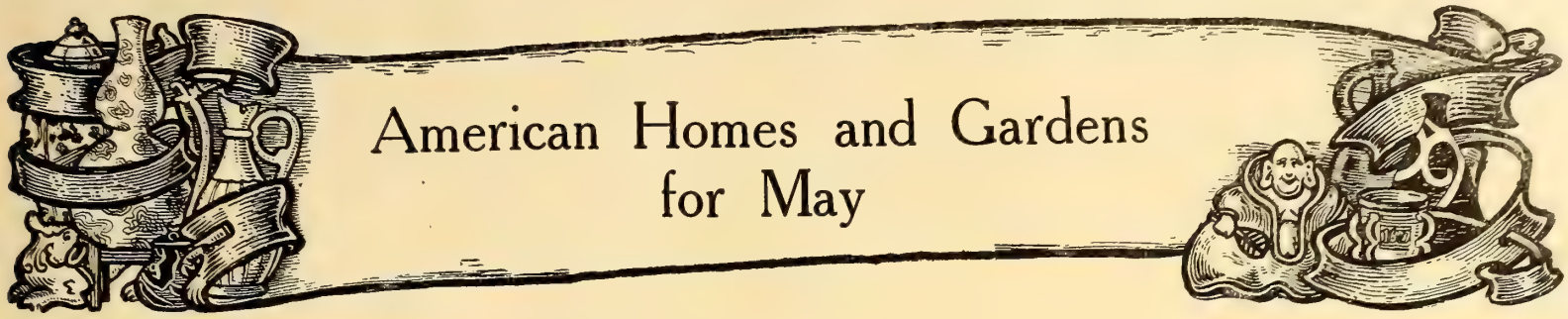
PHILADELPHIA



BRISTOL'S RECORDING THERMOMETERS

make continuous records of atmospheric temperatures, and are designed for both indoor and outdoor temperatures. Send for new catalogues.

THE BRISTOL COMPANY, WATERBURY, CONN.
NEW YORK *Branches* CHICAGO



American Homes and Gardens for May

An Artist's Home in the Berkshire Hills

The region of the Berkshire Hills is so superlatively beautiful that it seems precisely the place for an artist's retreat. Mr. Thomas Shields Clarke, the well-known painter-sculptor of New York, has long thought so, and has given abundant testimony of his affection for this lovely region in the handsome house he has built there. His home, "Fernbrook," is one of the most interesting places at Lenox, and is admirably described by Mr. Barr Ferree in his series of papers on "Homes of American Artists." The article not only describes the house and grounds in detail, but it is sumptuously illustrated with numerous photographs taken expressly for this magazine, and never before published. The house is a fine type of the best domestic work of Mr. Wilson Eyre, and the grounds, designed and planted by Mr. Clarke himself, abound in matters of interest.

Domestic Ventilation

Mr. Thaleon Blake, C.E., has prepared a thoughtful and suggestive paper for this issue dealing with this most important of domestic themes. It is full of practical suggestion and advice, and tells many things the housekeeper most needs to know. The article has been written expressly for the housekeeper, and is devoid of technicalities. It is abundantly illustrated with numerous plans and diagrams.

An Old House Reproduced

A page of interesting photographs illustrate a singularly successful attempt to reproduce a design of the seventeenth century in a modern house. The pictures show how thoroughly adaptable this quiet old farmhouse-like dwelling is to modern needs. It is a simple and quiet little house, immensely suggestive, and shows what really good work can be accomplished by adhering to good old models. As a study in brickwork, too, this house has some useful suggestions.

Flower Boxes

The flower box has come into such general use as an aid to the exterior decoration of the house that there is now ample material for a study of its uses and the way in which it may be employed. Miss F. Maude Smith contributes a helpful article on this subject entitled "Flower Box Beauty," and offers many practical suggestions on the care and maintenance of the outdoor flower box. Her article is handsomely illustrated with a choice assortment of examples that offer many valuable suggestions to the flower lover.

The Porch Sitting-Room

The modern house porch is no longer used only as a means of getting into a house or away from it, but has become quite as much a "room" as any interior apartment. The porch sitting-room and the porch dining-room are now well established features of most country houses, and are an integral part of the small house quite as much as of the more pretentious mansion. A double page of illustrations, crowded with interesting examples of these rooms from many different houses, abounds in suggestions of the most practical kind. Mr. Ralph de Martin contributes the article, and has something of importance to say on this subject.

Monthly Comment

The reader who misses this editorial page fails to get the full value of the magazine. Topics pertaining to country life are discussed with a keenness and freedom that is unequaled in contemporary journalism. It is good, strong advice that is given here, and every country resident will find something of interest and value in its trenchant paragraphs.

Sabine Hall

There is poetry and romance in the historic houses of old Virginia, and one of the most interesting of these fine old places is described by Miss Edith Dabney Tunis in her descriptions of Historic Mansions on the Rappahannock River. The illustrations not only completely show the house within and without, but include some of the rare old portraits and other objects of historic interest.

Watercress Culture in France

Watercress culture on a large scale is not generally understood. Mr. Jacques Boyer tells how it is done in France and writes an interesting description of the process. The article is richly illustrated and shows every step of the work from the beginning until it is prepared and bunched for market.

A Modern New Jersey Home

A new house at Hackensack, N. J., is described by Mr. Paul Thurston, and is illustrated with views and plans. It is a happily conceived, modest little home of real decorative value. The article gives a complete description of it, and the photographs show exactly what it is.

Ants and Bees as Pets

Bees and ants may seem a bit odd as pets, but Mr. Percy Collins, who writes entertainly on this subject, makes their real interest very clear and evident. Every lover of animals and every keen sympathizer with nature will find a special pleasure in this article. It is illustrated with new and original photographs showing how these strange pets may be cared for and enjoyed.

Penllyn House

This is a picturesque residence at Ardsley-on-Hudson which is ably described by Mr. Francis Durando Nichols, and is beautifully illustrated with numerous photographs of the exterior and interior. The floor plans are also given, so that the house is presented in its entirety. It is a house of engaging charm, and exhibits many special points of interest.

Creating a Small Country Home

No contemporary writer on the country home has saner words of help and criticism to offer than Mr. E. P. Powell. He not only knows his subject, but is personally familiar with every aspect of it. In the present paper he discusses the general lay-out of the small country place, tells what to plant in the way of trees and shrubbery, and where to plant it. It is a practical, helpful article of the most valuable kind. It is illustrated with plans and diagrams showing just how to make the best use of a small lot.

Home Garden Work

The notes contributed monthly to the magazine by Mr. Charles Downing Lay are full of practical help and suggestion, and are prepared for the special need of the amateur and individual house owner, who wants his grounds maintained in good order but who must, in many instances, depend on his own exertion for what he accomplishes. There is help here for everyone, and help of the right sort.

Correspondence

Problems in home furnishing are discussed monthly by Miss Alice Kellogg, than whom there is no more competent authority. Tell her how you are troubled and she will help you. And, when you think of it, tell her of your practical experiences that she may pass them on to others.

SANITAS

THE WASHABLE WALL COVERING

For Your Dining Room
and every room of your house

FROM the many beautiful patterns and plain tints of dull finished Sanitas, you can get more delightful decorative effects at moderate cost than are possible with even fancy-priced papers or fabrics.

And no other wall covering, however expensive, can give you the *fade* proof, *crack* proof, *tear* proof, *stain* proof, and *dirt* proof *durability* of Sanitas—*always* instantly cleaned as bright as new with a damp cloth.

Dull finished Sanitas for living rooms, like glazed tile Sanitas for bathrooms and kitchens, is printed in oil colors on strong muslin.

Write to our Special Department of Home Decoration. Describe the rooms you desire to decorate and receive *free samples, with sketches of clever new interior treatments.* WRITE TODAY.

When you buy Table Oil Cloth ask for "Meritas," guaranteed perfect. Every yard trade-marked on the back.

MERITAS STANDARD OTC COMPANY OIL CLOTH

"WIPE OFF THE DIRT"

THE STANDARD OIL CLOTH CO.
Dept. 11
320 BROADWAY
New York City

BANNERMAN

Army Auction Bargains

Tents -	$1.90 up	Old Pistols - - - - -	$ .50 up
Shoes -	1.25 "	Officers' Swords, new -	1.75 "
ARMY SADDLES	3.00 "	Cavalry Sabres - - -	1.50 "
" Bridles -	1.00 "	UNIFORMS -	1.25 up
" Leggins, pr.	.15 "	7 Shot Carbine	3.50 "

U. S. SPRINGFIELD B-L RIFLES $1.79
Blank or Ball Cartridge, 35 cents box of 20.
1907 MILITARY CATALOGUE, 260 large pages, thousands of beautiful illustrations—with 1909 supplement, wholesale and retail prices. Mailed for 15 cents (stamps).
15 ACRES GOV'T. AUCTION GOODS.
FRANCIS BANNERMAN, 501 Broadway, NEW YORK

THE IDEAL SMALL HOUSE *is*
THE BUNGALOW

For real Bungalow Plans from Bungalow Land send one dollar for ***"Bungalowcraft"*** to H. A. EYMANN, 403 Chamber of Commerce, Los Angeles, Cal. The latest, most comprehensive and most practical book on the Bungalow, inside and out. Copiously illustrated.

FINE HARDWOOD FLOORS

Most economical, healthful and satisfactory—for old or new houses, different patterns to match furnishings. Outwear carpets. Stocks carried in the leading cities.
PLAIN OR ORNAMENTAL. THICK OR THIN.
Write for Pattern
THE INTERIOR HARDWOOD CO. MFTR'S. INDIANAPOLIS

"SPARKS FROM THE FIRESIDE"

is an interesting booklet about the best kind of Spark guard. Sent *free* on request. Write us at once.

SYRACUSE WIRE WORKS
125 Univ. Ave., SYRACUSE, N. Y.

Trees - Shrubs - Roses - Bulbs

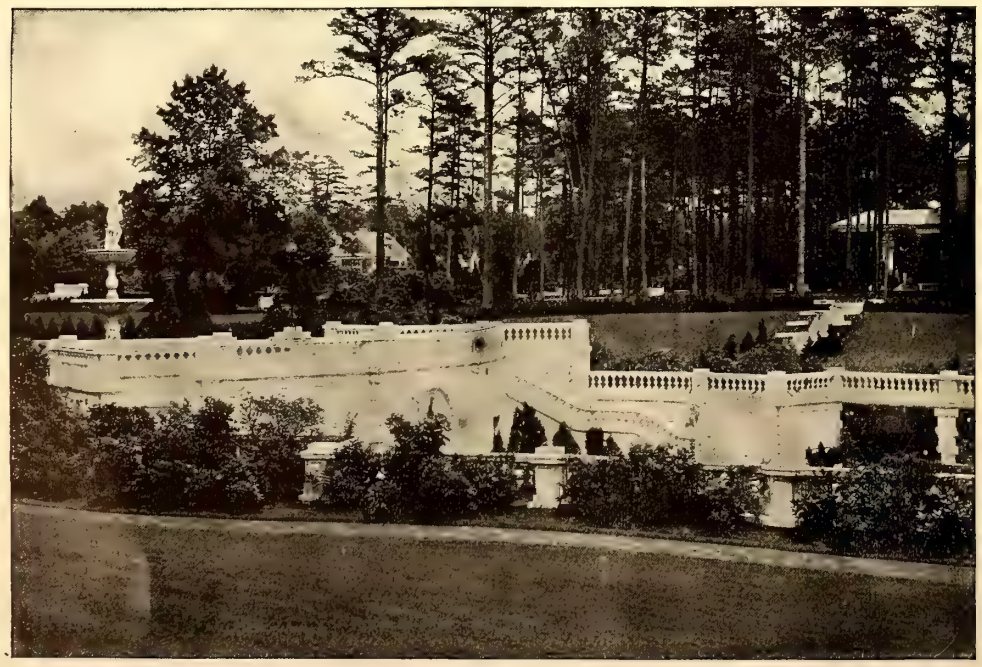
Order now for immediate shipment. Largest and finest high-class stock in America. 200 page catalog free to buyers. We do not handle any cheap goods but give the best of satisfaction. Write at once. Agents wanted in all unoccupied territory.

HERRICK SEED COMPANY
Rochester, N. Y.

American Estates and Gardens

By BARR FERREE

Editor of "American Homes and Gardens," Corresponding Member of the American Institute of Architects and of the Royal Institute of British Architects



4to. 11x13½ inches. Illuminated Cover and 275 Illustrations. 306 Pages.

Price, $10.00

A sumptuous book, dealing with some of the most stately houses and charming gardens in America. The illustrations are in nearly all cases made from original photographs, and are beautifully printed on double coated paper. Attractively bound. The book will prove one of the most interesting books of the year and will fill the wants of those who desire to purchase a luxurious book on our American Homes.

Munn & Company
Publishers of "Scientific American"
361 BROADWAY, NEW YORK

AMERICAN HOMES AND GARDENS

$3.00 a Year

CONTENTS FOR APRIL, 1909

PAGE

THE HOUSE OF WALTER ROBB WILDER, ESQ.—An Old Flagstone Walk with Overhanging Shrubs 122

MONTHLY COMMENT—A Promise for the Future 124

THE ARTISTIC EXPRESSION OF THE SMALL COUNTRY HOUSE..*By Francis Durando Nichols* 125

PLUMBING FOR A SMALL COUNTRY HOUSE.....*By John A. Gade* 136

THE MAKING OF AN IRIS GARDEN .....*By Samuel Howe* 140

DECORATIVE FEATURES IN THE SMALL HOME.....*By Alice M. Kellogg* 142

A GROUP OF MODEL MOTOR HOUSES FOR THE SMALL COUNTRY PLACE. *By Ralph de Martin* 146

HOME-MADE NOVELTIES FOR THE COUNTRY HOME.....*By Mabel Tuke Priestman* 148

EVOLUTION OF THE SMALL HOUSE PLAN .....*By Joy Wheeler Dow* 150

A FORMAL GARDEN AND PERGOLA DESIGNED BY AN AMATEUR...*By Alexander R. Holliday* 152

FURNITURE FOR THE SMALL HOME .....*By Edith Haviland* 154

THE USE OF CONCRETE IN THE BUILDING OF THE SMALL COUNTRY HOUSE.
By Benjamin A. Howes, C.E. 157

CORRESPONDENCE:

PROBLEMS IN HOME FURNISHING.....*By Alice M. Kellogg* ix

GARDEN WORK ABOUT THE HOME.....*By Charles Downing Lay* ix

The Heating Apparatus for the Small Country House.

The Hot Bed.

Combined Rate for "American Homes and Gardens" and "Scientific American," $5.00 per year
Rate of Subscription of "American Homes and Gardens" to foreign countries, $4.00 a year
Rate of Subscription of "American Homes and Gardens" to Canada, $3.50 a year

Published Monthly by Munn & Company, Office of the "Scientific American," 361 Broadway, New York

CHARLES ALLEN MUNN, President - - - - FREDERICK CONVERSE BEACH, Secretary and Treasurer
361 Broadway, New York 361 Broadway, New York

[Copyright, 1909, by Munn & Company. Registered in U. S. Patent Office. Entered as second-class matter, June 15, 1905, at the Post Office at New York, N. Y., under the Act of Congress of March 3, 1879]

NOTICE TO CONTRIBUTORS—The Editor will be pleased to have contributions submitted, especially when illustrated by good photographs; but he cannot hold himself responsible for manuscripts and photographs. Stamps should in all cases be inclosed for postage if the writers desire the return of their copy.

The house of Walter Robb Wilder, Esq. An old flag-stone walk with overhanging shrubs leads to the central terrace garden from which the entrance to the house is reached

AMERICAN HOMES AND GARDENS

Volume VI April, 1909 Number 4

The Wilder house is charmingly placed in a setting of fine trees

Monthly Comment

A Promise for the Future

THE comparatively inexpensive and small house dominates the April number of AMERICAN HOMES AND GARDENS. Its supreme utility looks out in every page in the engravings, and the text offers many helpful suggestions for the owners and occupants of homes of moderate cost. Both editor and publisher believe that in this issue the true keynote of this magazine has been struck, and henceforth it is proposed that dwellings of this kind shall predominate in the illustrations, and that the text shall be expressly prepared to offer helpful advice and suggestion particularly adapted to the needs of the wide public for whom such houses are built. The plans laid down for the carrying out of this idea are of the most comprehensive kind, and the next few months will present many notable changes and betterments in the make-up of the magazine, changes which will render it more indispensable than ever to the home builder and the home creator.

THE house of moderate cost is the most numerously erected dwelling in America. It is the home of the people, and its beauty and arrangement, its decoration and utility are alike an expression of a national condition and a national taste. It is a type of dwelling that abounds everywhere, and the home-makers who live in it constitute by far the larger part of our population. It would seem as though a monthly magazine especially conducted in the interest of this great body of people must be of especial helpfulness and have a national character of the widest possible scope.

THE magazine that helps its subscribers performs a public work of the utmost utility. This work can be accomplished in two ways—first, by leading and stimulating public opinion, and, secondly, by offering practical suggestions in response to personal appeals for aid. These are the true functions of a magazine of this character, and according to this plan the future of AMERICAN HOMES AND GARDENS will be developed, precisely as these ends have been its chief goal in the past. But the future holds promises of larger and broader work, for the magazine stands at the threshold of a new era of usefulness for the reader, and work on these lines—the leading lines of the magazine—will be greatly expanded and developed.

THE great need of the day in houses is the convenient house. It is the house expressly adapted to the needs of the people who live in it. It is the well built, economically planned and designed house that everyone wants to have. It is the house which abounds with aids to housekeeping, and which, in the arrangement of the rooms and the shape and form of the walls, offers structural conveniences and advantages to the occupant. It is the well-equipped house, the house that contains everything and ministers to everything, and does this in a helpful, economic way. This is the house of the future, even more than it has been the house of the past, and the newest and best examples of this type of dwelling may be confidently looked for in each succeeding issue of AMERICAN HOMES AND GARDENS.

IT IS quite as much the province of the house to be ornamental as to be convenient. The two terms are not at variance, but are simply complements of each other. Nor is the ornamental house necessarily an expensive one, adorned with all sorts of costly devices, ministering to costly needs, gorgeously furnished, and expensive to maintain. The ornamental house is frequently as modest as you please, and its gracious exterior and pleasing form is but an outward expression of the gentle, kindly life that goes on within it. The ornamental house—once the real meaning of the word is explained and understood—has as true a place in the economics of house-building as the convenient dwelling that offers a stern utility without a single redeeming grace of line or structure. In a very true sense the ornamental house is a useful house, and many interesting examples of this type are awaiting their turn for publication in our pages.

THE modern house is a type of its own. It is the dwelling that is at once progressive as well as up to date. If in exterior design it does not necessarily illustrate the most advanced ideas, it is at least equipped with the most recent of household helps, and is especially designed in every way to meet the somewhat complicated conditions of modern life. The study of houses of this kind reveals many a practical idea and offers a host of useful suggestions, many of which are available for every householder. Watch the pages of the magazine for houses of this character, and see how much you may learn from them.

THE creating of a home—which is a much broader theme than housekeeping alone—is not a natural gift, but a matter of development and study. Some develop the home more readily than others, but one must know both the how and the why in order to avail oneself of the vast store of modern knowledge and experience in home making. The garnering of this rich store of knowledge has been placed in competent hands, and the best results of the most comprehensive survey will be presented in a new and attractive way that will prove of the utmost value to every home maker.

THE house is the mere shell in which human life is lived. It represents the material side of existence, and is of no value unless it is occupied and used. Human life in relation to the house expresses the personal aspect of home making. The personal life within, around and about the house will make or mar it as a dwelling, and render the most beautiful architecture and the most skilful planning of little avail. A special series of articles will, from time to time, offer advice and suggestion from the best authorities on this most important aspect of the house and home.

THE garden is the natural accessory of the house, the home beautifier, the crown and adornment of the dwelling. It is as necessary to a house as a roof, and more beautiful than the most sumptuous architecture. A series of articles will treat of the garden in its most practical aspects, will tell what to plant in it, what will grow under certain conditions and what will not, how the plants, trees and flowers should be cultivated, and what to do at all seasons of the year with the most available plants.

A PATCH of vegetables is a source of great gratification to the small country place. Nearly everyone wants to have such a garden, and very many try to develop these humble sources of food supply. But vegetable culture needs to be known and understood, and the articles in hand and in preparation dealing with this subject have an unusual practicability that the amateur gardener will find immensely helpful.

The Artistic Expression of the Small Country House

By Francis Durando Nichols

THE great desire for the artistic expressed in the house of modest cost has been a long felt want, and we now have that coveted fulfilment, for the layman not only demands it, but architects have come to realize the fact that they must keep abreast of the times, and in consequence are now putting forth their best efforts toward meeting this end. The day for the "hammer and saw" house is fast disappearing and the elimination of the "square box," once so frequently seen in suburbs, is becoming a thing of the past.

The man with twenty-five hundred up to five thousand or seven thousand dollars, which he wants to put into a house, must have something in its design and its plan that will express his own individuality, and in order to meet this end he demands that the architect selected by him shall incorporate some of his ideas and suggestions in the general scheme so far as they may be feasible.

The plans must be arranged for the needs of the family, and the designs must be influenced by the site upon which the house is to be built. Having settled these two points, the restrictions lie only in the materials which are to be selected for the construction of the house and the amount of money to be spent upon it.

The illustrations shown in this article are representative of the best type of small houses built in the vicinity of New York.

1—The Wilder house rises up from the hillside as if it were a part of it

The house of Walter Robb Wilder, Esq., at Bronxville, New York, which forms the subject for the cover and also for the first house illustrated in this article, is a unique expression of the architect's character and taste. It shows a house of marked individuality, and is essentially the creation of a cultured and artistic mind requiring congenial surroundings.

When Mr. Wilder selected a foothill on which to place his house he chose it with a foresight for great possibilities. The lot has a forty-foot difference in grade from the front to the rear, as shown by the topographical map which was made of it as soon as the property was purchased. A tentative floor plan was made, and with that as a basis the grounds were laid out to determine by what means this slope could be overcome and the approach to the house and the grounds harmonized. The northeastern corner of the plot being the highest, and giving the best outlook, was chosen for the location of the house, with the drive brought in immediately below. To reach the level of the first floor, some fourteen feet above, and without either too long a single flight or too monotonous a series of steps, a four-foot stone wall was set along the drive, then a short path and then a grass terrace two feet high. Another short path leads to the main terrace eight feet high, along which the steps were carried and partially hidden by a steeped parapet.

The exterior of the house (Fig. 1) is covered with rough plaster in its natural color, while the trimmings are painted a grayish green. The roof is shingled and stained a soft grayish green, blending well with the trees which form the background to the site.

The house is approached from the main terrace (Fig. 2) to a small covered entrance (Fig. 6) opening to the hall. This is divided into two parts, one serving for communication to the various rooms and the other raised two steps, forming a little informal reception-room (Fig. 11) overlooking the main terrace, and from which the main stairs to the second floor ascend. The hall is paneled and painted white, while the walls are covered with a pea-green linen.

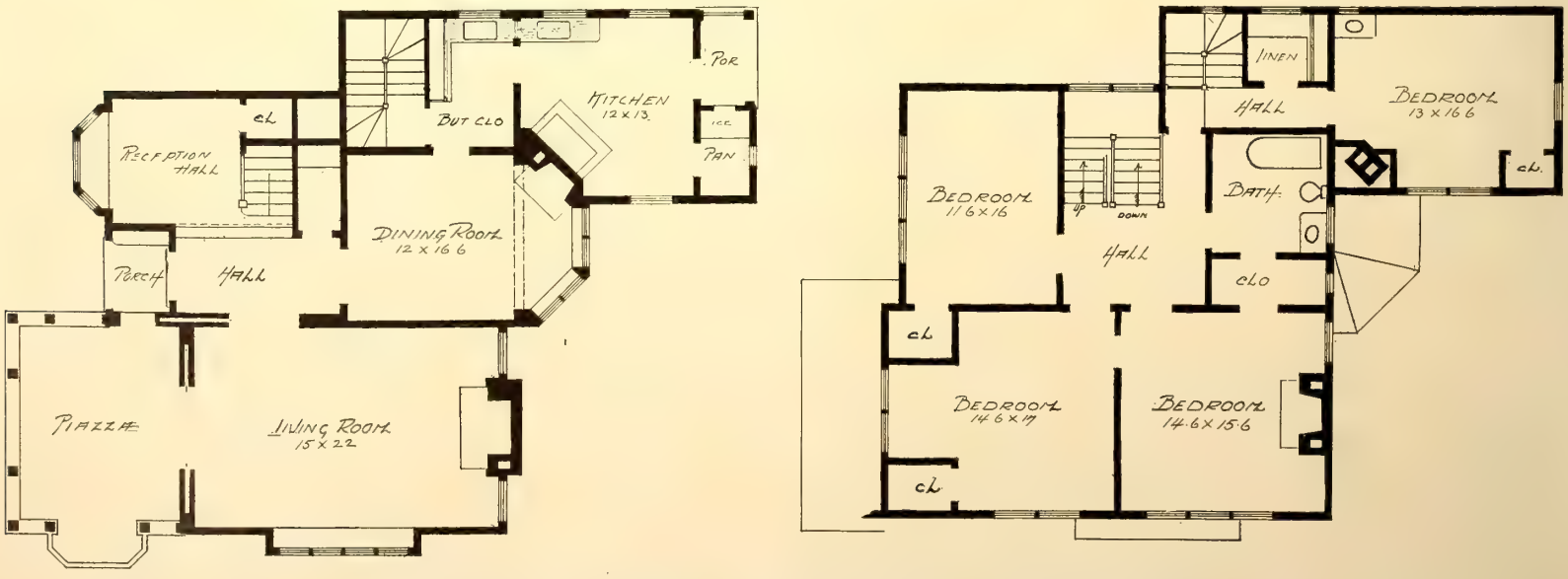
To the right of the hall is the living-room (Fig. 9), with a great open fireplace at one end and the entrance to the main porch (Fig. 7) at the other, and opposite the hall a long bay (Fig. 12) overlooking the lower garden. This room is finished in oak with a beamed ceiling and Japanese grass cloth on the walls stained a dull gold. The fireplace has facings and hearth of dull green Grueby tile and a mantel of simple design, with book-cases built in at either side. The color scheme of the room in autumnal browns is most delightful. The windows have soft draperies over which are hung softer ones of brown silk.

At the end of the hall is the dining-room (Fig. 10), also trimmed with oak and finished with a dark brown stain. The walls are covered with a green forest paper carried down in the panels of a skeleton wainscot. The ceiling is stuccoed with a rough plaster in an effective manner. The corner fireplace with tile facings and hearth is the feature of the room. The floor is covered with a plain moss-green rug, and the furniture is a very black-brown, harmonizing well with the color scheme of the room.

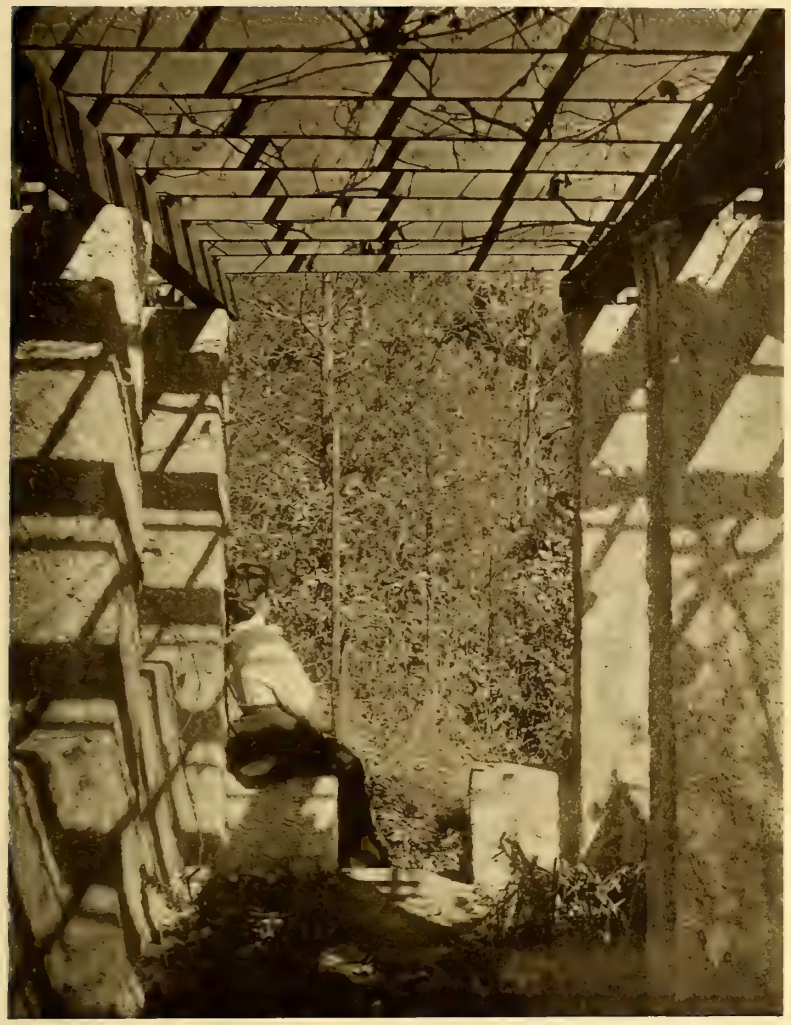
The second floor of the house contains three bedrooms, overlooking the terrace and lower garden. The bathroom has a wall covering of latticed paper with large pink roses

2—The terrace wall of the upper garden is surmounted with a balustrade built of concrete

hanging to the green trellis of the background. The servant's room is over the kitchen, and is reached by a private stairway. There is one room on the third floor besides plenty of storage space. The basement is devoted to the laundry, servants' toilet, storeroom, workshop, potting room, dark room and heating room. The heating is by the hot water system, and the radiators are concealed under the seats in the principal rooms. Having laid out the grounds to the extent of locating the house and the approaches with due regard to its future treatment, the main terrace was filled



3—The floor plans of Mr. Wilder's house show a convenient arrangement of rooms



4—The pergola in the upper garden forms the dividing line between the garden and the woods beyond

5—Numerous flower boxes filled with growing plants give the front of the house a brilliant aspect

6—A corner of the upper garden showing the concrete tea table in the foreground

7—The piazza is well fitted with simple and comfortable furniture and is reached direct from the living-room

in to the level and formal beds with cypress plank edges were laid out on two axes, one from the hall window and the other between two old cedars. A concrete balustrade was built along the top of the wall, and two seats and a small stand added to the formality of the garden. From the main path steps were carried up two terraces at the back, and on the upper terrace was built a pergola with stucco piers. Over this was trained a large grape vine, forming a dark green background for the beds of bright colored annuals and perennials; the sides being inclosed with lattice and covered with vines for the same purpose.

Between the terrace and the drive the space was kept in grass relieved by privet at the side, rugosa roses at the entrance to the workshop, a mass of shrubs at the further corner of the house, and a border of peonies, nasturtiums and perennials along the top of the drive wall.

The lower garden is built below the drive, and it was

8—Rough stone steps covered with masses of growing vines lead from the middle garden to the entrance to the house

this part of the grounds that was graded into terraces to give an effective setting to the house above. There is one long border, with the garden path between a corresponding space on the other side for the vegetable garden, and the center space divided into the upper terrace, the rose garden and the lower terrace. On either side of the rose garden is a long line of lilacs, while at the lower end are dwarf crabs and other flowering trees. At each corner are large triangular beds filled with perennials.

In order to blend the formality of the house and the upper garden with the natural scenery the lower garden is treated less architecturally, and has only two concrete seats on the upper terrace, a sun-dial in the rose garden and a hooded gate at the end of the garden path.

The house (Figs. 13, 14 and 15) of Mr. A. B. Connolly, at Forest Hills, Long Island, is built of fieldstone and brick. The piazza has concrete columns. The roof

9—The living-room has an open fireplace with Grueby tile facings of dull green color

10—The dining-room has oak trim treated in Flemish brown with Arts and Crafts furniture

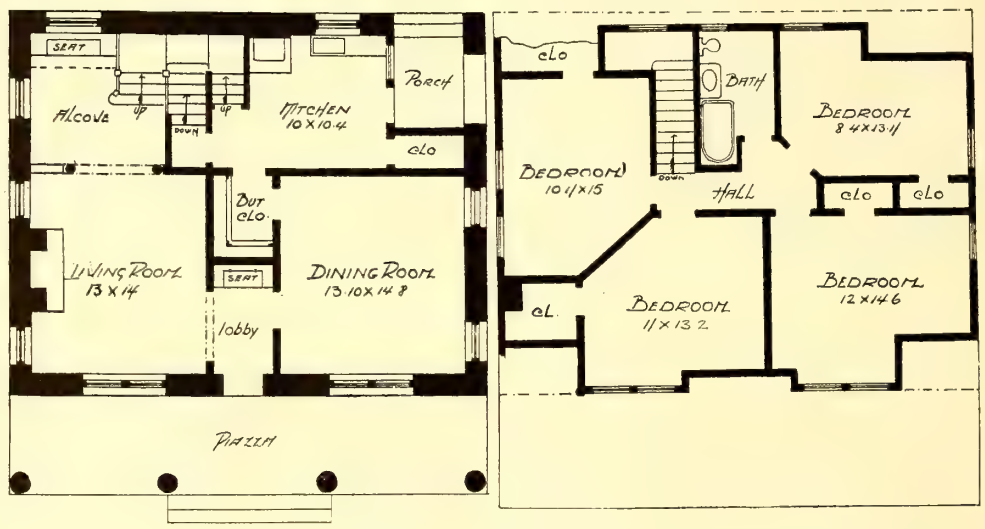
11—The stairs rise up from a broad platform on which is arranged a reception-room

12—The color scheme of various shades of autumnal brown used in the living-room is most effective

13—The first story of Mr. Connolly's house is built of stone and the second of brick

14—Another view of Mr. Connolly's house shows the outline of the roof forming a cover for the piazza

is shingled. The floor plans (Fig. 15) are conveniently arranged. The interior is trimmed with cypress finished natural. The living-room has an open fireplace with brick facings and hearth. There are four bedrooms and bathroom on the second floor, the latter furnished with porcelain fixtures and exposed plumbing. The cellar contains the laundry and heating apparatus. Cost four thousand five hundred dollars complete. The architect was Benjamin Driesler, of Brooklyn, N. Y.

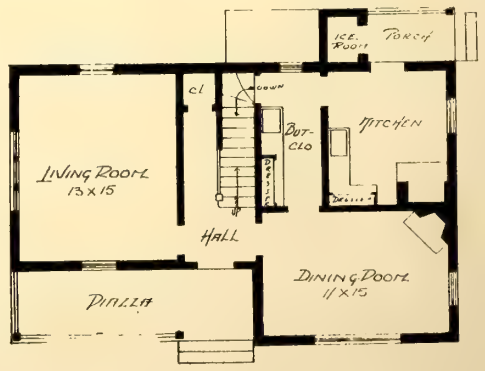


15—The plans of Mr. Connolly's house show an economic arrangement of rooms

The house of Mr. C. Wissel (Figs. 16, 17, 21 and 22), also at Forest Hills, exhibits a distinct departure from the house built for Mr. Connolly, and is a design of English feeling from the drawings of Architect William Adams, of New York. The first story is built of brick and the second story of stucco. The trimmings and shingled roof are stained a soft brown. The first floor is trimmed with chestnut finished natural. The dining-room has an open fireplace of brick. The second story contains four bedrooms and bathroom, the latter fitted with porcelain fixtures and exposed nickelplated plumbing. The cellar contains the heating apparatus, fuel room and laundry. Cost five thousand dollars complete.

16—Mr. Wissel's house at Forest Hills, L. I., shows English characteristics in its design

The small house (Figs. 18, 19 and 20), built for Henry B. Stone, Esq., at Milton, Mass., from the plans of Messrs. Winslow and Bigelow, architects of Boston, Mass., is in the gambrel roof style, with a stone

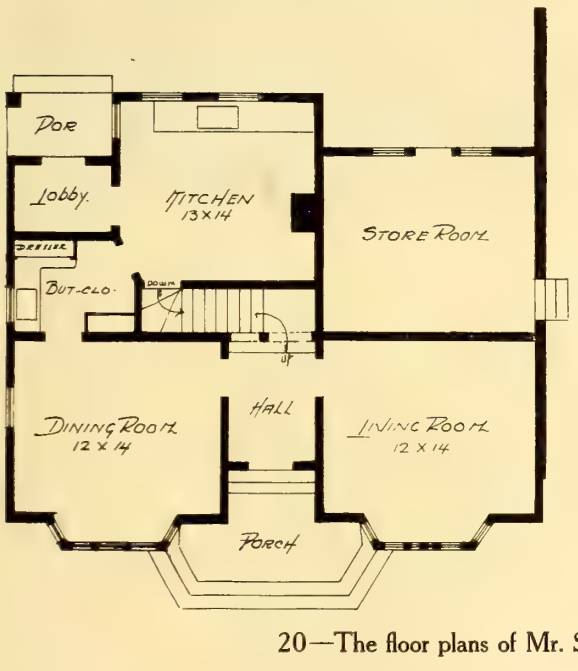


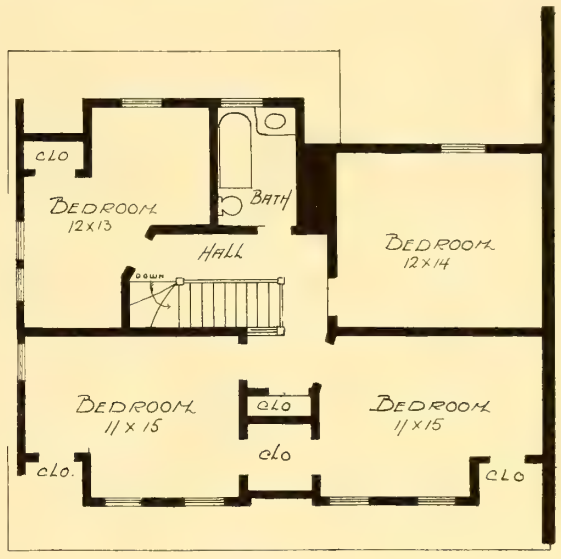
17—First story plan of Mr. Wissel's house

underpinning and clapboards for the superstructure. The whole is covered with a shingled roof. It is painted brown with white trimmings. The hall contains a neat stairway. The living-room and dining-

18—The small house on the estate of Mr. Stone at Milton, Mass. is well adapted for a small family

19—Another view of Mr. Stone's cottage showing the conservatory

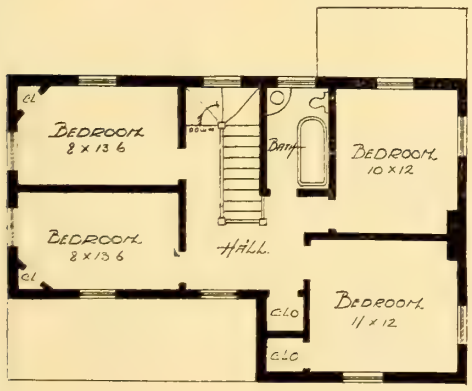




20—The floor plans of Mr. Stone's cottage show a pleasing disposition of rooms

room are trimmed with natural yellow pine. The kitchen and pantries are fitted up complete. The second story has four bedrooms and bathroom, and the cellar a heating apparatus and fuel room for the heating of the house and conservatory. Cost, four thousand eight hundred dollars complete, exclusive of the conservatory.

A house which is quite distinctive from the



21—Second story plan of Mr. Wissel's house

style of the other houses shown in this series is the one (Figs. 23, 24, 25 and 26) built for William J. Tingue, Esq., at "Brantwood," Short Hills, N. J. It is designed in the half-timber English style adapted to American needs, and is the work of Messrs. Rossiter and Wright, architects, of New York.

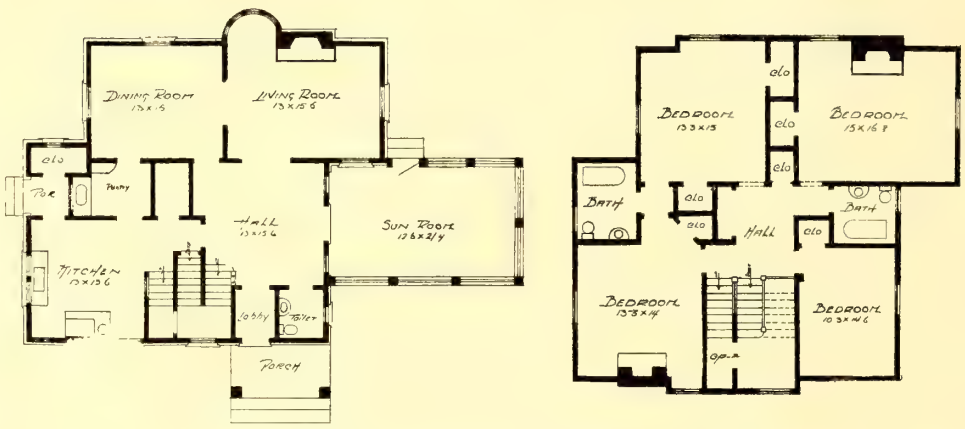
The first story is built of rock-faced stone, and the second and third is beamed, forming panels which are filled in with

22—Another view of Mr. Wissel's house shows the brick and half-timber construction

23—Mr. Tingue's house is built of stone, half-timber work and stucco

rough plaster. The beams and trimmings are stained soft brown. The roof is shingled. The entrance is into a lobby from which the hall is reached. The stairs to the second story ascend from the left of the entrance, while to the right is the living-piazza, which is inclosed with glass in winter, thus forming a sun-room. This hall has a white painted trim with oak doors. The walls are covered with a two-toned red wall paper. The sun-room (Fig. 25) is stained and finished with a forest green effect, which is carried out in the green rugs, the green furniture and the green granolithic floor.

The living-room has a fireplace with gray brick facings and hearth. This room has a green wall paper with large blush roses and white painted trim. The floor is covered with a yellow, blue and white



24—The floor plans show the kitchen at the front of the house

25—The sun-room, separated from the entrance porch, is in forest green and red

rug worked in a handsome design.

The dining-room has a green and yellow wall covering, white and yellow rug with an old rose border, and mahogany furniture. A distinctive feature of the plan is the position of the kitchen, which is built at the front of the house. The second story contains four bedrooms and two bathrooms, the latter being furnished with tile wainscotings and porcelain fixtures with exposed nickel-plated plumbing.

Servants' rooms are provided in the attic, as well as plenty of storage space, and the cellar contains the heating apparatus and fuel rooms.

The house (Figs. 27 and 28) built for Mr. Garrett at Bronxville, N. Y., is a dwelling of the gambrel roof style, and is covered throughout with shingles stained a soft brown color. The interior is

26—The rear and side of Mr. Tingue's house are as attractive as the front

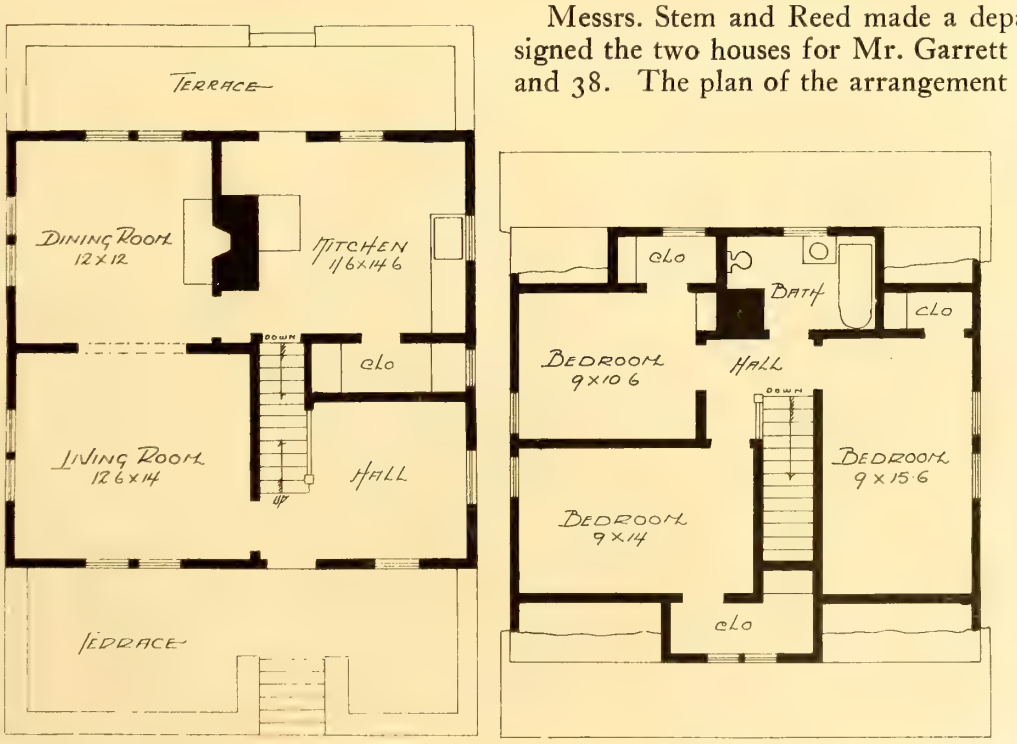
trimmed with cypress and finished with a soft brown stain. Cost three thousand five hundred dollars. Messrs. Stem and Reed, of New York, were the architects.

The house (Figs. 29, 30 and 35) also built for Mr. Garrett at Bronxville, N. Y., from plans by the same architects, Messrs. Stem and Reed, has rough-faced stone for the first story, and half-timber work for the second, the beams being stained brown with the panels filled in with rough plaster. The house shown in Fig. 36 is built on the same plan except that it has a different exterior treatment, rough plaster being used for the first story instead of stone, as in Fig. 29, and half-timber work with plaster panels being used for the second and third stories. This treatment shows how easy it is for an architect to change the entire aspect of a house on the exterior by using different material. Each house is trimmed with cypress finished a soft brown color. The living-room has an open fireplace with tile facings. The bathroom has porcelain fixtures and nickelplated plumbing.

27—A house built for Mr. Garrett at Bronxville, New York, is shingled throughout

The cost of each house complete was about four thousand dollars.

Messrs. Stem and Reed made a departure when they designed the two houses for Mr. Garrett as shown in Figs. 31 and 38. The plan of the arrangement of the various rooms is the same, but the architects have shown how very easy it is to design an exterior of a different style to accompany a similar plan. Both of the houses have a treatment of clapboards and shingles, and the interiors are fitted up the same as the house shown in Fig. 31. These houses cost three thousand eight hundred dollars complete.

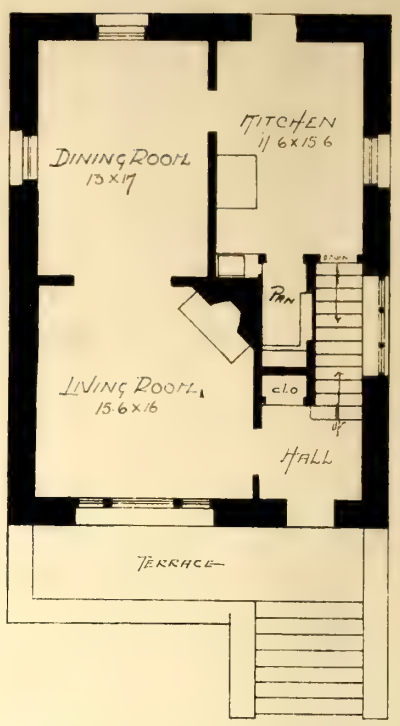


28—The floor plans of Mr. Garrett's house are simple in outline, the rooms well arranged

The stone and shingle house (Figs. 33, 34 and 40) also

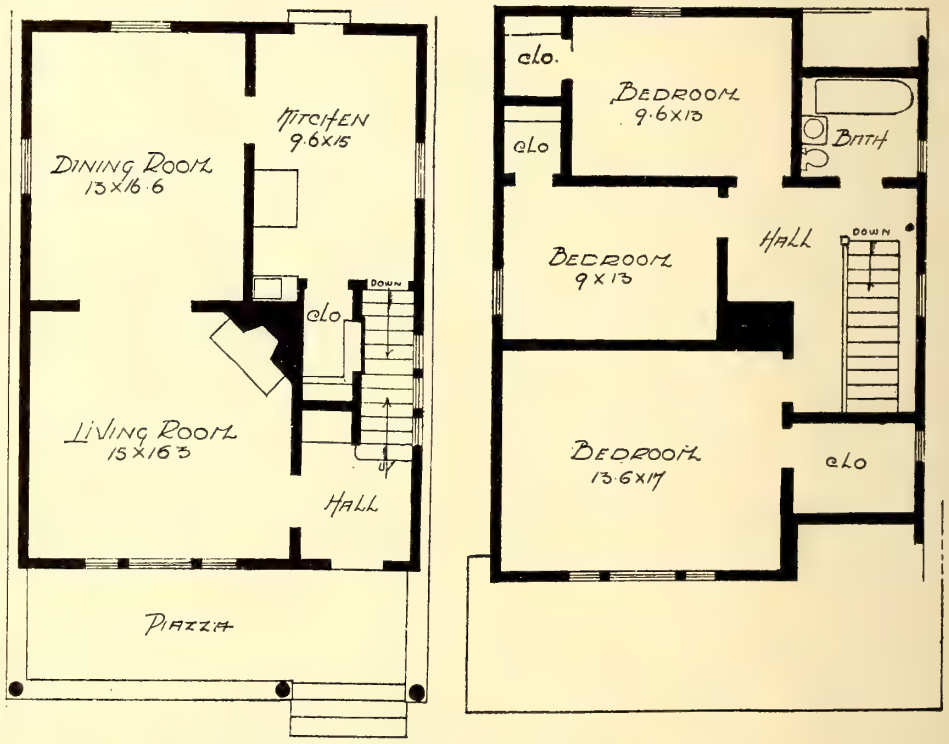
29—A stucco and half-timber house

built for Mr. Garrett, and from plans by the same architects, is a house containing more rooms, and consequently cost more money to build. It is trimmed with cypress stained a soft brown color. The hall has a neat stairway ascending to the second floor. The living-room has an open fireplace built of brick. The second floor contains five bedrooms and a bathroom. This house cost four thousand eight hundred dollars complete.



30—First story plan of house shown in figure 29

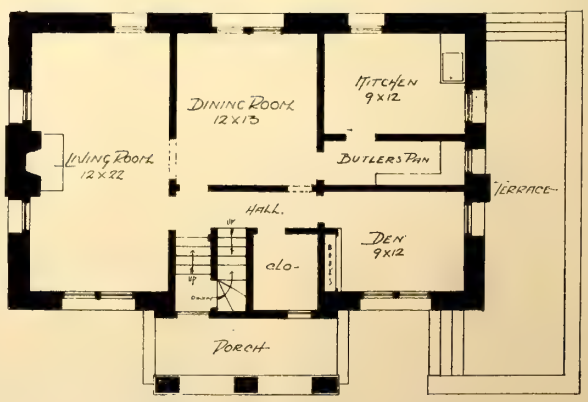
31—A cottage of clapboards and shingles



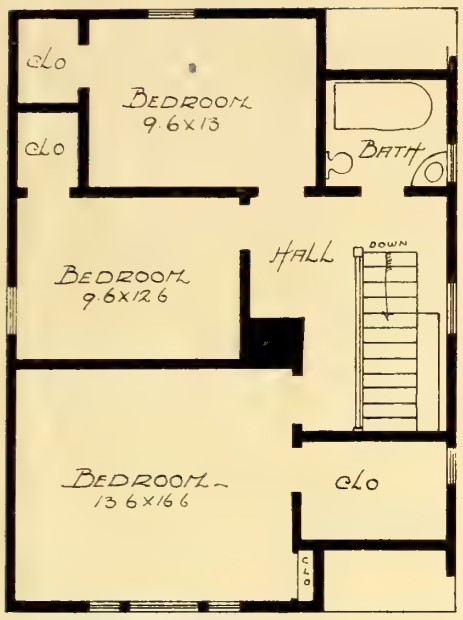
32—Floor plans of house shown in figure 31

33—A stone and shingle house

The story could, in fact, be continued almost indefinitely. The small house at small cost is an economic actuality and an artistic reality. It is true there have been other ex-

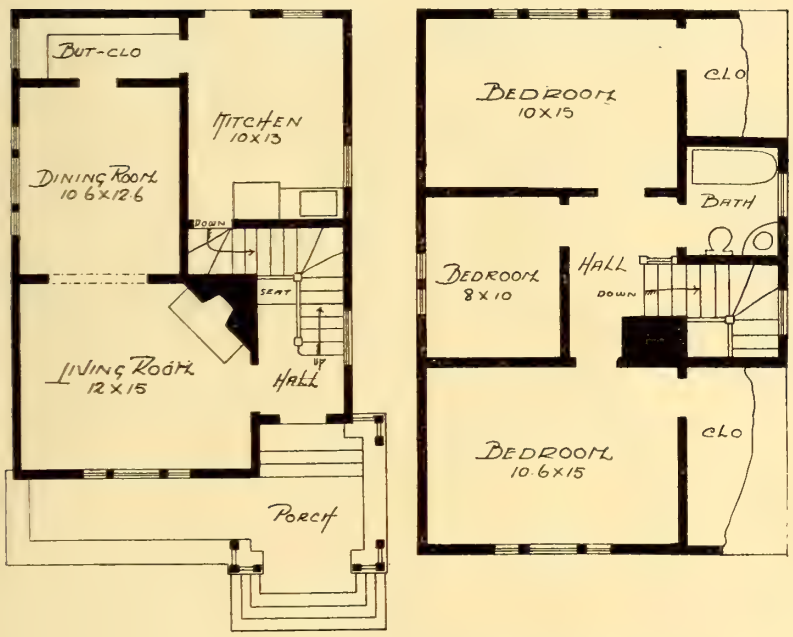


34—First story plan of house shown in figures 33 and 40



35—Second story plan of house shown in figure 29

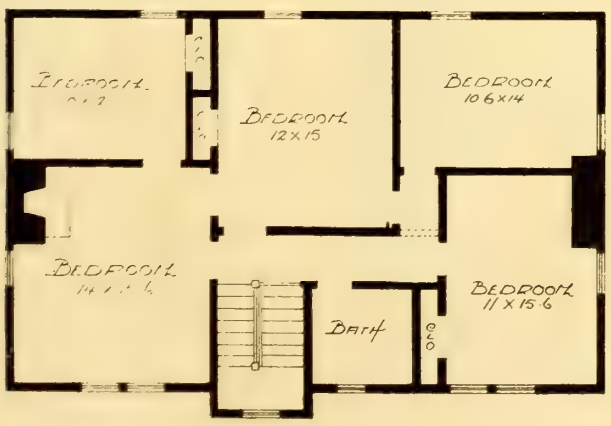
36—The same plan is used for this house as for the house shown in figure 29



37—Floor plans of house shown in figure 38

38—A house of clapboards and shingles

penses involved in the making of the homes represented by these dwellings, but these expenses are, at the most, comparatively incidental, and are relatively unimportant compared with the actual cost of the construction and finishing.



39—Second floor plan of the house shown in figures 33 and 40

40—Another view of house shown in figure 33

Plumbing for a Small Country House

By John A. Gade

THERE is no more vital feature in the construction of a country house than its plumbing. No defects afford such discomfort as improper drainage, water supply and fixtures.

The principal features which the builder should strive to obtain are: A sufficient supply of hot and cold water at all times and at all points, for cleaning as well as for flushing purposes; economical connections; a piping system properly graded, connected and ventilated; pipes of correct dimensions, run straight, with few, and no unnecessary bends, and provided with the best turns and offsets and cleanouts; fixtures that are open and accessible and of good materials.

At some point outside the foundations of the house the sewer pipe connects with either the cesspool, the sewage disposal plant, or other point where the sewage is disposed of. This sewer pipe is generally earthenware and of a size dependent on the work to be done. Whether of earthenware or cast iron, it should be laid below frost. Care should be exercised in laying it to grade, this being proportionate to flowage and size of pipe. All the joints should be properly packed and thoroughly clean inside. The pipe should be so laid that it is not supported on its hubs. The house drain, or the system of pipes inside the house through which the sewage and the water from all the various fixtures are led to the sewer pipe outside, is naturally located at some point (generally below the lowest fixture) in the basement or cellar. It had best be made of cast iron, of the grade called "extra heavy," and about four inches in diameter. This will make it sufficiently large to drain off properly the greatest quantity of water it may have to take care of, and still not so large that it is not self-cleaning. Before penetrating the house wall the drain pipe should pass through a drain trap or vent pipe fitting, which hinders the passage of foul air. Back of this point, inside the house, a pipe should be run vertically up through the walls and floors of the house to the fresh air above the roof, affording fresh air ventilation to the drain pipe. In running the drain pipe it should further be properly graded, about one-quarter inch to the foot, and be carefully supported — best, if not necessary to lay it as low as the cellar floor or below this, hung from the various floor beams by galvanized iron hangers underneath the joists.

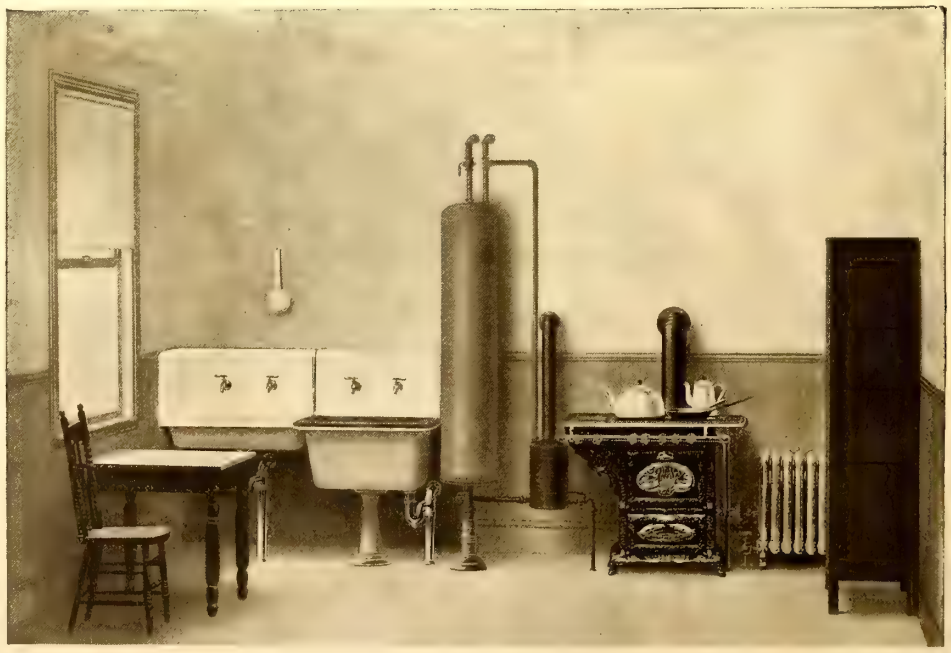
The soil pipes are the only other large pipes in the house. They run from the most convenient point of juncture with the drain pipe up through the building to wherever there are plumbing fixtures. As they are pipes exactly similar to the drain pipe, they are large and unwieldy. They must be dealt with in the very laying out of the building. If the fixtures are not so located that the soil pipes may be run parallel with and between the beams, the principal strength of the beams will have to be cut away for the run of the pipe. If possible, do not locate them in chases in the outer walls. The soil pipe, like the drain pipe, should have fresh air. In the case of the soil pipe, it should be extended from the highest point at which it may take care of sewage, up above the roof, and its top protected by a wire screen.

Not only should the drain and sewer pipes be ventilated, but every pipe from every fixture in the house should, at a point above every fixture, be connected by a pipe with a vertical ventilating pipe, bringing fresh air to every fixture. These ventilating pipes should be two inches where carried to water closets; one and one-half inches where carried to sinks, tubs or lavatories.

In running the sewer and drain pipes, the house builder should see that cleanouts are left in accessible positions, that proper pipes are employed wherever a horizontal pipe is run into a vertical one, that the openings about the pipes through the floors, ceilings and walls are tightly sealed or packed, and that the ends of the ventilating pipes come far away from dormer windows and in the least conspicuous places.

The pipes carrying the water from the various fixtures to the drain pipes should be four inches from the water closets, while from the other fixtures two inches is sufficient.

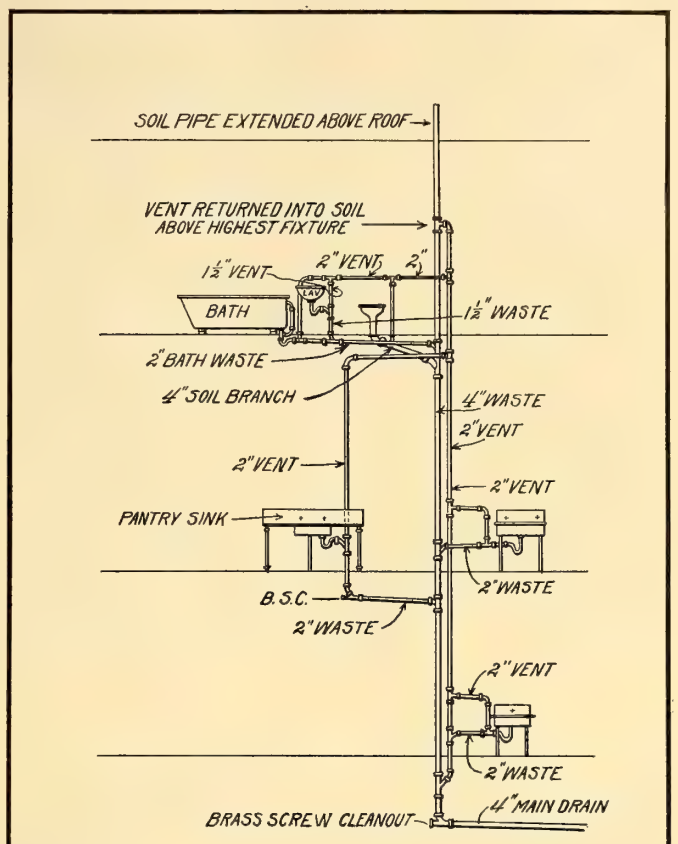
The pipes providing the house with water are the last. They should be made of galvanized iron and of different sizes. The connection which is made to the water main outside the house should be laid below frost and is generally one and one-quarter inches or one and one-half inches in diameter. This should be extended horizontally through the basement or cellar, as well as vertically up through the house in such courses as to give ready connections to all points of supply. The best sizes for the pipes or branches are, for those supplying bathrooms, laundry tubs, kitchen sink and outside sillcocks, three-quarters of an inch in diameter; while a one-half inch pipe is sufficient for the housemaid's sink, and one and one-quarter inch pipes necessary for the supply to the kitchen boiler. From the boiler the hot water main is carried up of the same size as the cold water main, and with various branches of similarly corresponding sizes.



An economical kitchen and laundry combined

It is not expensive to install good

and sanitary bath fixtures. The size and shape of the bathroom, the relative position of the fixtures, and the run of their pipes, should be considered before you plan your house or before you install its plumbing fixtures. Of course, nothing is nicer than to tile the floors and walls up above splashing height, finishing the top and angles with sanitary molded caps and bases, easy to keep clean. A vitrified tile is more serviceable for the floor, as you do not slip on it when your feet are wet, while the glazed white tile looks better on the wall. But tiling is expensive, not only in itself, but because floors and walls must be specially prepared with concrete and wire lath to properly take and hold the tile. Tiling the floors and walls of the average sized bathroom up to a height of five feet will cost you about one hundred and sixty dollars. You can, however, obtain a very clean and waterproof surfacing to walls and floors at a considerable less cost. There are many different makes of patent flooring consisting of wood pulp, cement, etc., such as Lignolith, Asbestolith, Taylorite, etc. They can be spread directly on the old or new wooden under-floorings; they last well and you can turn a hose on them as easily as on tile. You can have them finished in all colors. Run them also up a foot on the sides of the walls as a base around the room, rounding the angles, and then plaster the lower five feet of walls with a hard cement. The mason can line it off neatly with his trowel in six inch squares and finish it with a round molding for a cap. Five coats of white paint, the last two being enamel, will give a very close imitation of the tile and a very washable and serviceable surface. Sheathing the walls with wood and varnishing it is an alternative, but not as advisable, for waterbugs will lodge in the wood, despite every precaution.



SECTION SHOWING PROPER PLUMBING.

A good shape to make a bathroom is eight feet by nine feet. The illustration gives an ideal arrangement. It shows the bathroom having more than room for the three fixtures closely huddled together; it has also a convenient space for a chair. Nothing gives more comfort; you need it, to throw towels and clothes on. It further shows the lavatory and water-closet located against the outer walls, where the soil pipe connections are direct and short. You are able freely to get at the window, and the radiator underneath it, without having to lean way across a fixture; you are able to clean and dust around all the fixtures. Your lavatory is placed where you get the best light on the mirror above it, and you can brush your hair or shave in the most convenient manner. The narrowest you can make a bathroom is five feet six inches. The shortest length the three fixtures can well be set in, side by side, is nine feet six inches. The tub is generally about two feet two inches broad by five feet long; washbasins about two feet six inches long and twenty inches broad, while the water-closet is about sixteen inches broad and twenty inches deep. One must not, however, forget that the pipe and fittings which come underneath, around and behind all, take room. If the house builder is in doubt whether or not a fixture will go into an alloted space, it is wisest to ask the plumber for the "overall" measurements. Placing a shower with a duck curtain around it—which neither rots nor smells like the rubber curtains—over the tub, is a great luxury in the summer, as well as a great time saver where several boys want to wash in a hurry after their exercise, and have not the time to wait for the successive filling and emptying of the tub. Of course, placing the shower in a compartment by itself is ideal, but it is costly. Placing the water-closet in such a manner that although its piping is directly connected with the bathroom, and it may be used together with it, it still is in an independent compartment, and may be independently serviceable, even when the bathroom is in use, is also of value.

A model kitchen well equipped with heating apparatus

The bathroom fixtures vary much in size, material, shape and cost. A five foot tub is the size most extensively used. The material for both tub and the lavatory should be porcelain enameled iron. The water-closet bowl should always be porcelain. In general these fixtures should have as

smooth surfaces as possible, and should, of course, be provided with overflow outlets or connections, so that the bathroom is not flooded by carelessly flowing faucets. Water-closets should never have any working mechanism within the receptacle; tubs are much more comfortable with the waste pipes entirely outside the tub, and lavatories with a waste rather than the chain and rubber stopper which seem so willingly to part company. Triangular corner lavatories may be purchased where there is not sufficient space for a rectangular one, but they are not to be recommended. The three necessary fixtures may be purchased for about ninety dollars, though this is the minimum.

It is a great blessing to have a maid's sink located somewhere centrally off the second story hall. It should be of either earthenware or porcelain. It will soon be found to save both tub and water-closet much wear and tear incident to the drawing of water, emptying of slops and scrubbing.

After the bathroom has been properly prepared and the fixtures themselves correctly placed, the walls may be fitted out with the endless little furnishings giving much additional comfort. These may easily be set into the tile or cement of the side walls with expansion screws, but make sure before setting them, for once placed, changing them leaves unsightly marks upon the walls. Don't put the towel-rack so that the towels will slide off into the tub; don't put the sponge or soap rack so your head will hit them when you unsuspectingly get up after soaking in the tub; and don't place the glass shelf over the basin where it will interfere with the mirror. Remember that face towels should hang near the lavatory. Have your little medicine closet, which need not be over four inches deep, placed in between the studs of one of the walls, so that it need not project into the room.

The fixtures are economically placed against the wall

Well lighted and ventilated kitchen and servants' hall combined

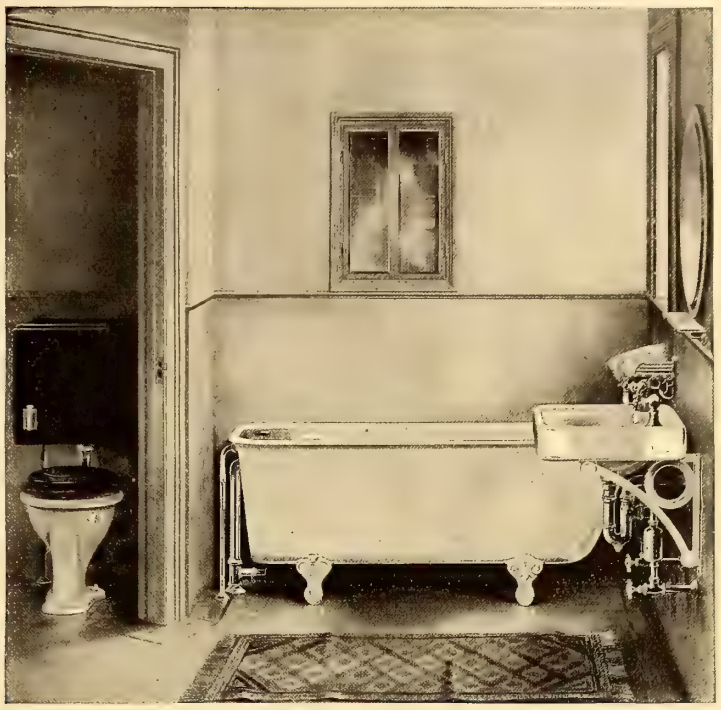
Plenty of elbow room for the laundress

The pantry and the kitchen and the laundry should be planned so as to come near the bathroom. Closely connected piping not only means considerable economy, but also simplified piping connections and better and more direct service. You will have straighter runs of pipe, fewer complications and connections, and quicker hot and cold water supply.

A kitchen must, if possible, be clean and cool, well ventilated and serviceable. Intelligent planning and fitting up makes it so, more than a big purse. It must both be and look clean. There, as in the bathroom, a painted cement wainscot is splendid. Back of the range a white enameled brick will, at very little additional expense, look much

better than the usual red pressed brick. It need never be painted, a mere cloth will when necessary keep it clean. If a few coats of paint above the wainscot prove too expensive, nothing will look cleaner than a few rolls of unfigured enameled tile wallpaper costing about thirty cents a roll.

Tile flooring is not only expensive, but very hard for the cook to walk on. A woodpulp flooring is here preferable—it is fireproof, so that it may be run up in front of the range, and the hearth entirely done away with. If you paint your side walls—and there is no better place to spend the money you are putting into your house—paint them rather buff or gray than white, they will not need freshening as frequently.



A toilet and bathroom in two compartments

Good ventilation of the kitchen is essential if your cook is to survive a first summer. If possible, procure a cross current of air by placing windows in walls facing one another. Place a hood over your range with a register under it to gather up the heat and smells into a ventilating flue. A kitchen is a working room, sometimes for the laundress as well as the cook, and must consequently be planned most carefully. A small gas stove does not cost much, and the gas bill is likewise slight. Your cook will soon find out how much less coal has to be carried, and heat and dirt is saved by it, and she will soon use the gas stove exclusively for breakfasts. Your yearly coal bill will be much smaller.

The boiler is not only in the way, but radiates a great deal of heat. It is well to cover it with asbestos and canvas jacketing, secured by brass bands and painted. The table where the cook works should not be near the heat of the range. The sink is best made of galvanized iron or porcelain, with a roll rim, about twenty-four inches broad and forty-two inches long; a good-sized ash drain board, slanted and grooved and merely finished with oil, will save the cook many steps. It must be placed where there is plenty of light, and the window sill behind it higher than that of most windows, so as not to leave an awkward hole for dust and dirt to collect in.

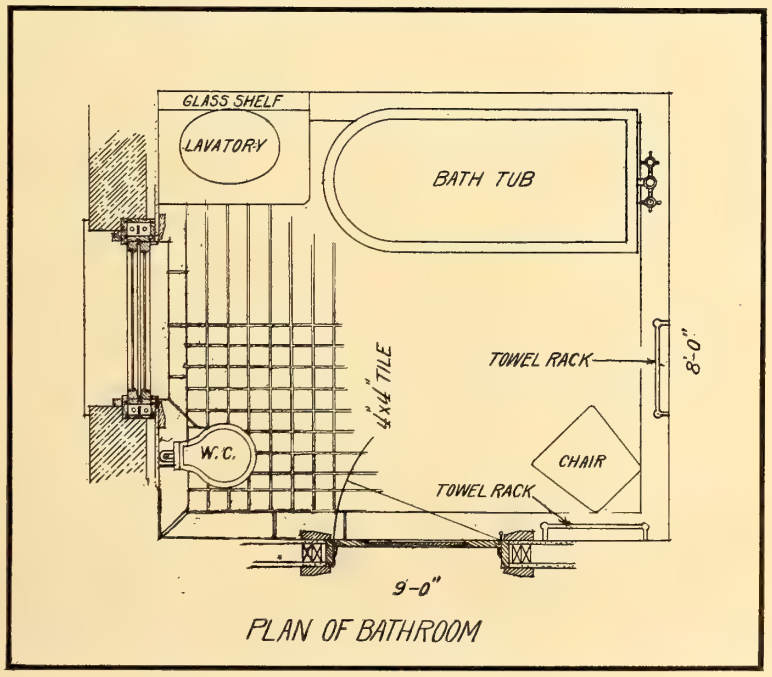
Your laundry tubs ought, if possible, to be in a separate room, so as to keep the washing and the cooking apart, with all their incidental labor and disturbance. If economy forces you to combine them, you may very cheaply purchase a small combination set of fixtures, composed of the kitchen sink with a tub on each side, the sink drainboards acting as covers to the tubs when they are not in use, and folding against the wall, back of them, on washing days. The kitchen ceiling will probably be covered with pipes taking hot water from the waterback and boiler to the various supply points, as well as cold water to kitchen, laundry and pantry fixtures. When correctly run and neatly hung in iron hangers to proper wooden cleats, they are not unsightly. Coat them with aluminum bronze and lay the valves so that any defect in the supply throughout the house may at once be checked by knowledge of the proper control.

A galvanized iron tank costs about one-half as much as a copper one; it is not so good looking, but may be bronzed similarly to the pipes. A copper boiler is better, as there is no danger of rusty water in it. Place the refrigerator outside the kitchen, where the iceman can easily get at it from outside as well as the cook from inside. A one and one-half inch discharge pipe from below the pan leading to the cellar sink will save the floor from many a flooding.

The pantry sink had better be made of planished copper, and as only silver or the glass and china of the table are washed in it, it need not be as large as the kitchen sink—sixteen inches by twenty-four inches is a good size. Making it of planished copper instead of porcelain will save many a plate from being broken, though a wooden mat will help a good deal if placed in the bottom of a porcelain sink. Of course, it should be placed where the waitress has good light, if possible, from over her shoulder. Do not close with cupboarding the space below the sink, but leave it open and easy to clean.

Provide for a gas outlet in the base of the pantry, near the dining-room door, for connections for a plate-warmer, especially useful in summer, when steam or hot water coils may not be serviceable for such purpose.

The plumbing for the small house is a very important subject, and is one that should receive every possible consideration, not only from an economic point but also from a sanitary point. The plumbing for a small house can be economically installed, provided an intelligent selection is made of the various fixtures, and the position they are to occupy. From a sanitary point of view much thought should be given to the connection of the various fixtures. The sectional drawings on page 137 show the various connections of the fixtures for the laundry in the cellar, kitchen and pantry on the first floor, and bathroom on the second floor. It shows soil pipes, vent pipes and connections, and waste pipes of each floor.



The space in this bathroom is economically used

The Making of an Iris Garden

By Samuel Howe

IN MANY parts of the country, ponds are a nuisance; they absorb undesirable and decaying vegetable and animal matter, afford a first-class breeding place for mosquitoes, and a shelter for all kinds of rubbish. Of course, this is the more marked when the pond happens to be near the house. Yet, in spite of this undesirable quality, much can be done with it. To begin at the beginning, it is often wise to drain off much of the water, clean out the bottom of the pond and condense the stream into a narrow channel, and plant the newly exposed area with plants that love damp places. As to the movement, we get that by a clever adjustment and change of levels of the water. It can be made to run over stones and allowed to rest in certain well defined places. It can be held up at intervals so as to encourage movement. In short, if the stream is a nuisance it is mainly our own fault, because there are so many methods by which it can be made to shine as a living light in the garden.

As a practical illustration of one of the methods by which this change can be brought about, the accompanying views of the transforming of the bed of an old pond near a roadway, at Chestnut Hill, Pa., will be of some interest. This pond became an iris garden. The stream held back by a dam, its outline changed and adjusted to the requirements of the plants, its depth greatly reduced, became a delightful and vitalizing force, very welcome in the picture.

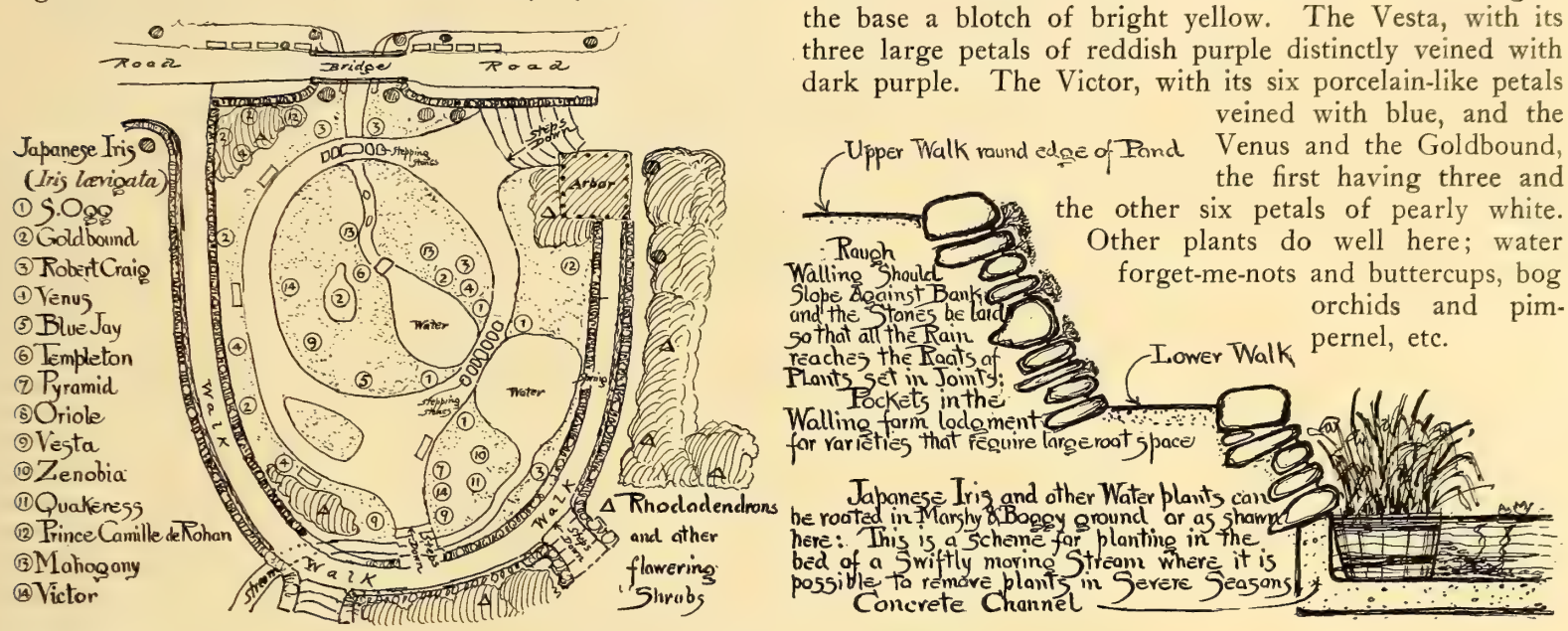
I give a rough sketch outline of the layout, showing the names of the plants and their location. From it will be learned that a rough rustic wall of stones, taken from the field and elsewhere, forms a rude terrace round the edge of the old pond. The wall is sloped toward the hillside so as to hold back the dirt, but care is taken to so lay the stones that they receive most of the rain and so nourish the roots of the small plants which are lodged in the joints. It also helps the roots of the larger trees which stand sentinel-like round the pond, casting their lace-like shadows over the scene. These trees are a portion of the native woods, to which have been added a tulip, a maple and a spruce. The head of the stream has been raised to husband the water, shaping and controlling it, encouraging it to reserve its force for a leap into the new channel; and the retaining wall at the lower end has been reduced in height so that every drop can be drawn off in the winter season should a

The iris garden in sunken bed of the old pond. The rustic bridge is over the cut in a former retaining wall. The iris is but just planted. A second season will greatly change things, filling the beds and massing the flowers in places

severe frost make too much ice. The new channel runs picturesquely, shaping the beds in which the iris is planted.

The iris enjoys swampy places, boggy pools and water margins; its thirsty roots enjoy the marsh with its water soaked clay; yet some of the most robust plants are to be found on the hill or the roadside where it is dry and sandy. The iris is not a grumbler, is easily satisfied with its surroundings, making the best of life. Yet, with all its royalty, it retains the better spirit of democracy by waiving class distinction. Perhaps in this it is somewhat unlike its rival, the orchid, in that the one will take what it can get and be thankful, while the other demands much and is often exacting in the extreme.

The iris most admired in this collection, and deservedly so, is the Blue Jay, with its six white petals deeply overlaid with azure blue, enriched with white lines, and having at the base a blotch of bright yellow. The Vesta, with its three large petals of reddish purple distinctly veined with dark purple. The Victor, with its six porcelain-like petals veined with blue, and the Venus and the Goldbound, the first having three and the other six petals of pearly white. Other plants do well here; water forget-me-nots and buttercups, bog orchids and pimpernel, etc.



Sketch plan of layout with planting list

Another view showing at the edge of the pond the terrace and its sloping wall of fieldstones, the arbor, and the rhododendrons planted as a frame or foil to the iris. This makes an interesting change of texture

Decorative Features in the Small Home

By Alice M. Kellogg

IN FITTING up the small home it is well to remember that its decorative features contribute the larger share toward its attraction. This does not minimize the value of a practical equipment of the general furnishings, but opens the way for accomplishing that most exacting problem of our times, the creation of beautiful homes.

Although these "decorative features" are usually a combination of color, design and materials, it is the quality first named that makes the most forceful, direct and pleasing appeal, even to those untrained in artistic principles, for the eye, once arrested by a happy grouping of colors, will overlook or disregard the lack of perfection in other details. Relying on this, the professional decorator often achieves, in an interior hopelessly ugly, some element of charm.

As the majority of the home makers must accomplish their results by the process of slow accumulation, it is of vital importance to keep a clear image of the prospective "color scheme" or "color harmony" to which each selection for covering the floor or furniture, for hanging the walls, curtaining the windows and shading the artificial lights will contribute.

Rugs and carpets occupy such a prominently decorative part in a room that one is wise to deliberate well before making a choice. There is still considerable discussion over the tea cups as to the relative advantages and disadvantages of rugs, but as the semi-annual cleaning miseries are eliminated by their use the question seems on the way to be settled.

It has taken a long time for the American mind to assimilate the fact that Oriental rugs are an enduring and decorative feature for the home, but where only a moderate outlay may be made the domestic rug must be accepted. As a comparison of prices is often helpful, one may reckon the Oriental rugs from ten dollars a square yard upward, and those made in this country from a dollar a yard upward.

The smaller and often broken-up spaces of the hall floor give an opportunity for using the foreign rugs with the least expenditure, and for this place one may look among the heavier weaves, Kazak, Afghan or Mousoul, for bold patterns executed in deep colors.

This year the copies made in this country of the Oriental rugs are more interesting than ever before, as the colors are on a softer scale. Carpet that is woven in a rug pattern is available when sizes must be made up to fit unusual shaped rooms, halls or stairways.

A wool rug that formerly was only made in Scotland is now being manufactured in this country, and at three dollars a square yard gives genuine worth in coloring, design and fast dyes.

Now that the Mission furniture has established itself as being a desirable type for our homes, there has come the necessity for floor coverings to accord with its severity of style. This need has been met by a heavy woolen rug, reversible and made in all colors with the ends finished with narrow stripes of contrasting colors.

A noteworthy part of the revival of interest in all handicrafts is the rag carpet weaving that has been started up all over the country. In the small home the rag rug will suit almost any room where there is not a great amount of wear.

There is a prevailing idea that the acme of artistic taste is reached by adopting a rug in a solid color, yet the mass of color is sometimes too startling to be pleasing. A soft tone is the safest selection if the plain rug is to be used.

In bedrooms the floor spaces are best laid with rugs that do not need to extend underneath the heavy pieces of furniture. By this arrangement the dust that always accumulates under the bed and bureau does not become imbedded in a wool or cotton texture, and it may be easily taken away with a soft cloth tied over an ordinary broom.

In living-rooms, on the contrary, the large rug that leaves only an eighteen-inch margin of flooring showing has special advantages in safety of foot-

1—Over-curtains contribute to a cozy interior

hold, restful lines and a sense of space.

Choosing a wall decoration is an artistic responsibility that the unpretentious home shares with others of more magnificence. The old custom of waiting for a house to settle before papering the walls is not followed nowadays. If the permanent finish is to be a tint, the plaster is applied roughly and careful thought is expended on the choice of colors. A neutral hue for the halls makes it possible to use the positive colors in the adjacent rooms. A harmonious linking of colors in rooms opening into each other is also worth the time and trouble to effect. If the best appearance is desired for a tinted wall the woodwork should be painted white.

In choosing a wall paper there are several considerations to be met: The rug or carpet, the woodwork, the exposure and the amount of light the room receives by day and by night. The color of the window shades and draperies and the furniture covering also demand attention, and withal, there is the limit of cost.

Amidst these often conflicting perplexities it is safe to adhere closely to conditions, regardless of the alluring displays in the shop windows and the successful attempts in the homes of one's friends.

If the rooms to be papered are small the less pattern that is introduced on the walls the better. Invisible or broken stripes, all-over designs printed in two tones of one color, plain colors and texture effects may be drawn from. A plain paper may sometimes be brightened by pasting a floral or picture border just below the ceiling, but if the wall is only eight feet high the absence of a border is advisable.

When two rooms are connected by an archway one wall paper may be used throughout. In northern and eastern exposures some tone of yellow will mitigate the loss of sunlight. In sunny rooms the popular choice is a green paper, but a gray paper will give more unusual treatment, and borders or bands may be added for color notes.

Picture decoration is often overdone in the small home. From the two extremes of bare walls and walls over-filled with uninteresting pictures there would be little hesitation of choice, yet one finds the latter almost always the most in evidence. Mirrors, too, are indiscriminately used and incorrectly hung.

2—A foliage pattern is a decorative choice for a hall

As window curtains have something to say to the outside world of the taste that reigns within, their exterior effect is worth studying. In a city where only the front of a house is on view, the window shades and lace curtains should present a uniform appearance. In a detached house in suburb or country this rule need not be observed, but attention should be paid to the interior effect.

Where the woodwork is finished in a dark stain an ecru lace may be used at the windows, and white or cream net for woodwork that is painted white.

The heavy lace curtains that were in vogue a few years ago have been discarded for lighter fabrics, and many dainty novelties have taken the place of the conventional curtains by the pair. The home maker who is skilful with her needle may now fashion her own curtains with scrim, etamine, madras, grenadine, muslin, bobbinet, filet or mull, adding insertion and edging if desired.

Over-curtains are so contributory to a cozy effect, especially in winter, that they may be reckoned among the essentials in the decorative effects for the small home. Their cost need not be excessive, as there are many varieties of draperies costing from seventy-five cents a yard and upward. Some of the Scotch materials that are sun-proof are particularly distinctive for this use.

3—Bed cover and window curtains may be made of the same material

In bedrooms it is often possible to use the same goods on the beds and also for the window curtains. In a summer camp where the walls could not be papered or tinted, the chintz was sewed together in strips and tacked on the walls also.

For pillow covers for the divan and covers for the tables there are some Japanese chintzes at only fifty cents a yard, and the same patterns are printed on rough silk for two dollars.

How often one sees in homes of refinement an ugly piece of material "picked up," usually, at a bargain table, doing service as a pillow cover, yet throwing out the entire color harmony of the room. Economy, too, is often wrongly practised at this point, and expense lavished in unneeded parts of the home.

The character that a single small object such as the covering of a sofa pillow imparts to a room may be estimated by the fact that one of the largest decorating establishments in New York City gives as much attention to filling an order of this kind and in relating design and colors to their environment as to matters of larger concern.

In furniture coverings there are undoubted possibilities for pronouncedly decorative effects, yet the advantages of restraint are too apparent to require discussion. Unsuccessful accomplishments in this domain are mainly due to the introduction of too many patterns and too great a variety of colors—a mistake that has been avoided in the room illustrated in Fig. 6 by utilizing one material for the over-

4—A good design, simple and strong, for a brass bedstead

fashioned carved sofas. Cotton and woolen tapestries are now made in small, set designs that, at a little distance, have an almost plain surface. In velvets and velours there are curtains and upholstery work.

Covering each piece of furniture with a different material gives too many points of expression in any one set of four walls. A noticeable improvement may be made by allotting one texture to all pieces of furniture that are built on the same lines. (This rule is elastic enough to allow a uniform covering on all the furniture when desirable to balance the effects.)

Furniture coverings should blend into their settings without giving a shock of surprise to one who enters the room for the first time. Difficult as this may seem to accomplish it is not an impossible feat when samples of a good size are available for experiments.

The textile fabrics to be had at this time are much more varied in character than the market afforded a few years ago. Haircloth in charming tone, in a self-woven pattern or in a mixture of colors, suits the old-

5—A thick curtain is needed to draw across a door-window at night

6—Curtains and sofa cover are alike

new, original weaves. For summer homes and cottages there is a surprisingly large collection of cretonnes, printed linens and linen taffetas.

The center of the dining table affords an opportunity, not realized in every home, for decorative ideas in cut flowers and growing plants. The miniature Japanese gardens set forth in shallow Japanese bowls make quaint centerpieces. For flowers that grow on tall stalks, daffodils, narcissi, hyacinths, tulips and lilies, the Japanese way of standing them in flat dishes supported by a pottery or metal holder is gaining favor. If potted plants are to be used on the dining table there are attractive jardinieres to be had in Russian brass or copper, and rattan ferneries made in Japan.

Certain other small objects that add a more purely decorative touch to the home are the ornaments for the mantel-shelf. These have so much attention concentrated upon them and are viewed at such close range that the most careful thought should be given to their selection. How often one sees a complete disregard in the mantel ornaments for anything approaching beauty of form or color, and how many times the eye rests uninterestingly on a too-generous array of

7—A bedstead with cane head and footboard is a new departure

8—Bedroom in Adirondack camp designed and decorated by Messrs. Coulter and Westhoff

9—A flowered paper always suits old-fashioned furniture

inferior articles. What to exclude from the mantel-shelf is more readily listed than what is best to place there. It is now generally conceded that family photographs and purely personal souvenirs are to be reserved for one's private rooms and are not to be exposed in the formal rooms of the house. Amateur handicraft and the odds and ends that mark the season of gift-making should not have mantel space, nor should the mementos of travel that are interesting only for their associations.

With so much popular attention given to stenciling (which seems to be taking the place of china painting, embroidery and pyrography) a wide range of usefulness is opened in home arts.

Many unique stencil patterns may be applied on linen, crash and cotton crepe for the minor articles that are required for home comfort — covers for the toilet table and bureau, laundry bags, handkerchief boxes, adding the touch of charm that only such exclusive work can bestow.

In fact, whatever portion of the home is approached from the decorative point of view there are limitless resources to draw upon either through home talent or in the manufactured products of our own country and the importations from foreign places.

A G
Model M
f
Small C

By Ra

Simple and inexpensive

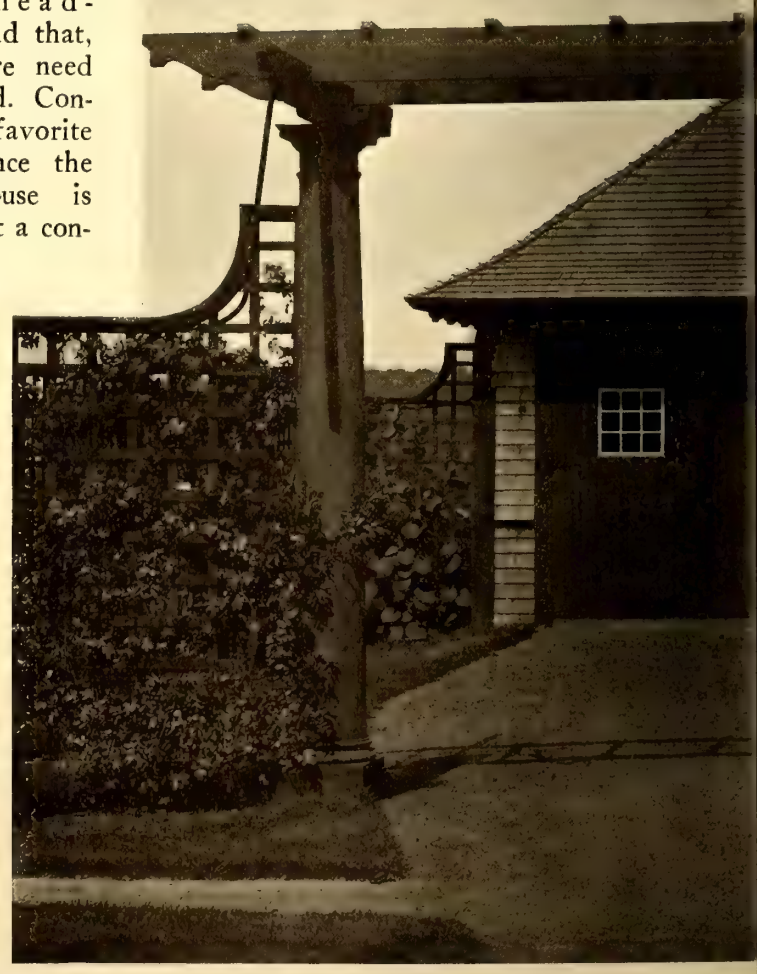
Shadowed by trees

IF THE country home is not actually complete without its motor house, its utility and livability is greatly increased thereby. The motor may not yet compete with the railroad and the trolley in popularizing the country as a place of residence, but it has certainly greatly added to the pleasure of country life, and has aided and helped it in a multitude of ways. Many men who are able to look after their own cars, as well as drive them, now find it pleasanter and cheaper to live in the country than to remain in the city, where the co of maintaining a car is considerable and the opportunities for using not always of the best. The small motor house, therefore, has come be regarded as quite necessary as an adjunct to many country place and since it is entirely devoid of complexity in construction, a modest ty of garage has come into use, some types of which are shown in th photographs on these pages.

The small garage is, in truth, scarce more than the merest shelt for the machine. A certain amount of tool room is required, and sor appliances, but unless the owner is a natural mechanic these had be be of the simplest kind, since no one should undertake extensive r pairs to a machine without a full and complete knowledge of its stru ture. Some tools, of course, will be imperative, since ordinary servi will demand them; but the workshop, as it is understood in large garage will be quite needless on the small place, and the building of the moto house is, therefore, reduced to the problem of the simplest shelter.

Four walls and a roof, with a window or two, seems to be all that required. The doors must, of course, be ample; they and the height of the walls must permit a sufficient head-room; beyond that, nothing more need be considered. Concrete is a favorite material, since the concrete house is fireproof, but a con-

A two-car garage



An effecti

oup of
tor Houses
the
ıntry Place

de Martin

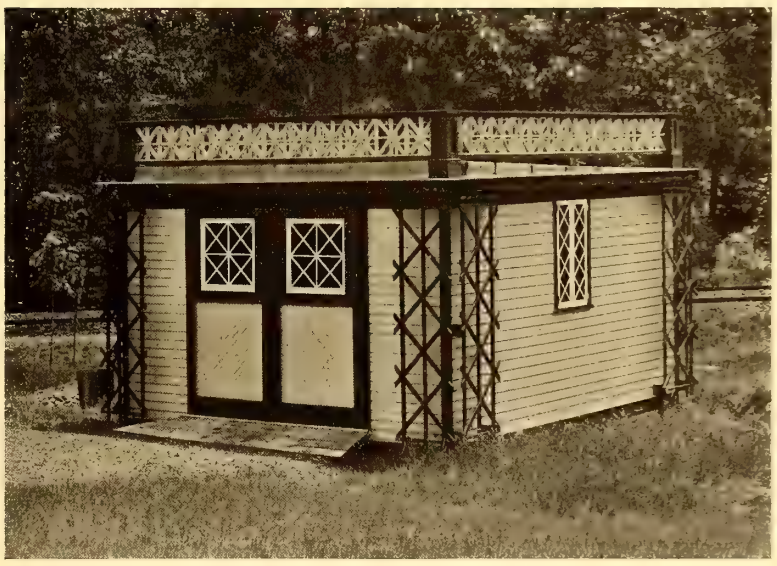
crete house with a wooded roof is, of course, no more fireproof than one with wooded walls, and the latter material is also favorably regarded for inexpensive garages.

There are few structures that are at once so useful and so necessary into which the artistic enters so slightly. No structure on the house grounds is so unobtrusive or so modest as the small garage. Its design is practically fixed by its form and dimensions, and being strictly utilitarian in purpose calls for no unnecessary artistic features. One may, indeed, apply trellises to the walls, as has been done in one of the houses illustrated—to its great advantage, but the artistic problem of this small structure has yet to be developed. Meanwhile we may well remain content with the simplest of designs and with the most modest of exteriors. It is not so much the form of the house as the machine that it shelters. The latter is quite outside the scope of these brief notes, and it is perfectly obvious that any sort of a machine may be sheltered in any sort of a building large enough to contain it, and provided with a suitable means of getting in and out.

Being a modest structure, the modest garage seeks the retirement of the most modest spot on the home grounds. It has no functions on the lawn, nor does it properly belong in a conspicuous place. It need only be big enough for the demands made of it and sufficiently accessible to meet every requirement. It may, therefore, be imagined at the rear of the lot, or beneath some shadowing trees, or embedded in shrubbery. It belongs in just such places and nowhere else. And this is not because its modesty is unartistic or offensive, but because such a simple little building has absolutely no other place to which it is suited.

By its nature the garage is small, modest and retiring. Its usefulness is great, but it is a quiet usefulness that is enhanced by narrow dimensions, simple lines and retiring location.

In harmony with the house



With trellises and roof balustrade

situation

An ample shelter

A Group of Model Motor Houses for the Small Country Place

By Ralph de Martin

IF THE country home is not actually complete without its motor house, its utility and livability is greatly increased thereby. The motor may not yet compete with the railroad and the trolley in popularizing the country as a place of residence, but it has certainly greatly added to the pleasure of country life, and has aided and helped it in a multitude of ways. Many men who are able to look after their own cars, as well as drive them, now find it pleasanter and cheaper to live in the country than to remain in the city, where the cost of maintaining a car is considerable and the opportunities for using it not always of the best. The small motor house, therefore, has come to be regarded as quite necessary as an adjunct to many country places, and since it is entirely devoid of complexity in construction, a modest type of garage has come into use, some types of which are shown in the photographs on these pages.

The small garage is, in truth, scarce more than the merest shelter for the machine. A certain amount of tool room is required, and some appliances, but unless the owner is a natural mechanic these had best be of the simplest kind, since no one should undertake extensive repairs to a machine without a full and complete knowledge of its structure. Some tools, of course, will be imperative, since ordinary service will demand them; but the workshop, as it is understood in large garages, will be quite needless on the small place, and the building of the motor house is, therefore, reduced to the problem of the simplest shelter.

Four walls and a roof, with a window or two, seems to be all that is required. The doors must, of course, be ample; they and the height of the walls must permit a sufficient headroom; beyond that, nothing more need be considered. Concrete is a favorite material, since the concrete house is fireproof, but a concrete house with a wooded roof is, of course, no more fireproof than one with wooded walls, and the latter material is also favorably regarded for inexpensive garages.

There are few structures that are at once so useful and so necessary into which the artistic enters so slightly. No structure on the house grounds is so unobtrusive or so modest as the small garage. Its design is practically fixed by its form and dimensions, and being strictly utilitarian in purpose calls for no unnecessary artistic features. One may, indeed, apply trellises to the walls, as has been done in one of the houses illustrated—to its great advantage, but the artistic problem of this small structure has yet to be developed. Meanwhile we may well remain content with the simplest of designs and with the most modest of exteriors. It is not so much the form of the house as the machine that it shelters. The latter is quite outside the scope of these brief notes, and it is perfectly obvious that any sort of a machine may be sheltered in any sort of a building large enough to contain it, and provided with a suitable means of getting in and out.

Being a modest structure, the modest garage seeks the retirement of the most modest spot on the home grounds. It has no functions on the lawn, nor does it properly belong in a conspicuous place. It need only be big enough for the demands made of it and sufficiently accessible to meet every requirement. It may, therefore, be imagined at the rear of the lot, or beneath some shadowing trees, or embedded in shrubbery. It belongs in just such places and nowhere else. And this is not because its modesty is unartistic or offensive, but because such a simple little building has absolutely no other place to which it is suited.

By its nature the garage is small, modest and retiring. Its usefulness is great, but it is a quiet usefulness that is enhanced by narrow dimensions, simple lines and retiring location.

Simple and inexpensive

Shadowed by trees

A two-car garage

An effective situation

In harmony with the house

With trellises and roof balustrade

An ample shelter

Home-Made Novelties for the Country Home

By Mabel Tuke Priestman

THERE is a fascination about thinking out original things for the home, and this can often be done by using commonplace things which have little value in themselves. In every home there are all kinds of articles that accumulate and which in time are thrown away because we have not found a use for them. It is, therefore, advisable occasionally to review what we have on hand and see if a useful purpose can not be found for them.

Often very useful pieces of furniture can be constructed from useless lumber. Some girls who were furnishing a house on dimes needed a settee for their living-room, and not having the means to purchase even the most primitive frame, they had to plan how best they could make one. They converted three boards that they found in the cellar into a strong and substantial settee. The lumber was rough and unplaned, but this did not matter. One strip was sawed in two for the ends, and the other two were just the right length. Legs were made from odd pieces, and these were pushed up to the top of the divan so as to act as a brace. The kitchen poker was then used for drilling holes on all four sides, and an old clothes line was drawn tight and woven from end to end and across, making a firm foundation for the old mattress, which was placed on top of this and covered with plain green linen reaching to the floor. This made a charming divan when piled with decorative pillows.

A bookcase was needed for this room, and this was provided by using the shell of an old bureau. The divisions between the drawers were shelves for the books. Two spindles that had been thrown away acted as supports for the middle of the shelves. The bureau itself was used in the dining-room as a sideboard. The top drawer was retained, and, when lined with felt, made a convenient drawer for silver. A pair of cellar window frames made for a nearby house exactly fitted the space beneath the drawers, and after these were stained mahogany, the old bureau made an interesting piece of furniture—half sideboard and half glass closet. More lumber from the cellar made two shelves to hold the glass. A pair of brass hinges, a can of mahogany stain, two panes of glass and the frames were the only expenses for making both pieces of furniture.

In a country bungalow that was built without a hall and with two doors opening into an extremely small vestibule, the problem where to hang hats and coats was a serious one. An ingenious arrangement was thought out by the owners by placing wooden slats on the only vacant wall space, into which hooks for holding clothing were screwed. The middle space was planned to hold a mirror. A hinge seat held rubbers and made a convenient hall seat as well. As there was only enough space for the front door to open without touching, the advantage of such economy of space can readily be seen.

We have all experienced the inconvenience of having logs lying around waiting to be placed on the fire. When the supply is not kept in the room, and they are brought in as required, it is often a great convenience to have some receptacle. Our illustration shows some lumber stained and arranged in such a way that it will hold one log or several according to the way it is turned.

An old ironing table that was past service for its first use, took on a new lease of life from being stained an olive green. It made a useful addition to the porch in the summer, and was a handy seat in the hall during the winter months.

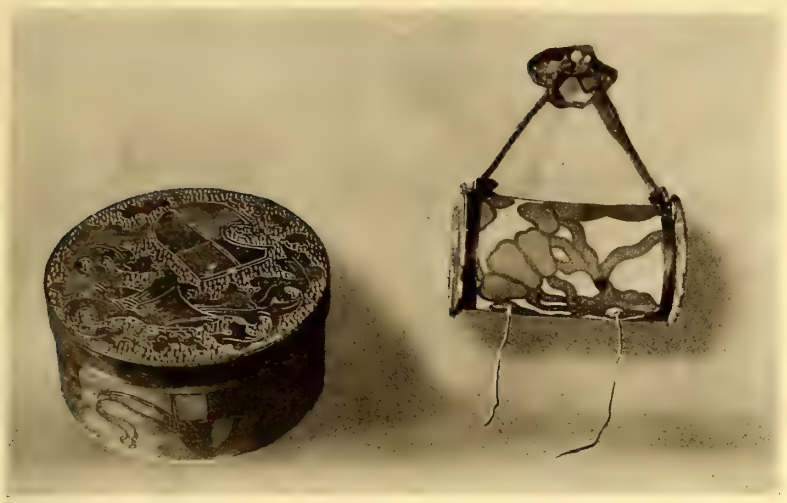
A baking powder can may be converted into a useful receptacle for string by covering it with pretty cretonne, and making cardboard ends covered with the same kind of cretonne and about half an inch wider than the can. Two holes must be bored through the side for the string. A ball of heavy and one of fine string can be placed in this receptacle, which, when hung up with a ribbon, is a useful addition to the home.

The white wooden boxes sold for pyrography make useful Christmas presents. Unlined and ornamented with heraldic patterns, they make a much appreciated holder for men's collars. Or, if preferred, these boxes may be lined as a workbasket, and when finished in dainty colorings are very acceptable to a girl. They may either be burnt with a suitable decoration or the box may be covered with cretonne pasted neatly over it. The outside is first covered and then it is neatly finished with a plain lining for the inside, preferably sateen.

In going through a market, baskets of all kinds can be found which can be brought into use for the home. That in our illustration was originally filled with corn cobs, but a practical use was found for it by lining the inside and concealing the rough slats with a pretty cretonne. The girl who used this basket sadly needed more closet room, and found that by placing hangers across the top of the basket, she could hang two or three skirts in it at once. It was over forty inches high, and so the skirts did not touch the bottom. The receptacle was placed in a corner of the room and made a bright bit of color as well as a serviceable skirt protector. The same kind of a basket could be used for soiled clothes, and, being so narrow, would take up very little room where space had to be economized.

Making a divan frame

An ordinary toaster or gridiron can be converted into a receptacle for newspapers. Cut two pieces of cardboard the size of the gridiron, and cover them on both sides alike with plain sateen or cloth. Then neatly join the edges together and baste the two covered pieces inside the



Burnt-wood collar box and string case made from a baking powder can

An ironing table as a porch settee

gridiron, having first painted the gridiron with bronze, silver or gold paint. With ribbons to match the lining, the toaster makes a convenient and decorative holder.

A woman who has an open mind for making use of rubbish, will find the means for converting all sorts of unlikely things into useful articles. A unique play room was made for a baby out of an old wine basket. This was tied by the handle to the bedpost, so that if the child leaned over it did not tip over. He was too little to get out of it, but his arms were long enough to reach his toys when they fell on the floor outside of the basket. The mother, who did her own housework, found it invaluable, for if she left the room she knew the baby was perfectly safe. A soft little blanket was laid in the bottom and the gathered muslin with which the basket was lined could be laundered frequently, so that it was always kept fresh and dainty looking. A further improvement would be to stain the basket a pretty shade of green, so as to hide the lettering, or a frill of cretonne could be used in preference.

New bread trenchers can be put to a decorative use by burning appropriate designs and using them on the plate rail in the dining-room. When carried out in the colors of the room or just in burnt tones, they may introduce a needed color.

Interesting as it is to construct home-made articles for household decoration in this manner, it should not be forgotten that all such work has its limitations. Home-made articles can not always compete with the products of the shop either in finish or in workmanlike qualities. In other words, they are apt to have a distinctly home-made character which sometimes detracts from their decorative value. This is less liable to be the case where such articles are made for one's own use than when they are made for friends. Not always can the strongest affection sustain the test of home-made gifts which may very likely have no real or true place in another sitting-room or bedroom. But the ingenious girl or woman who has a handy knack at making things can often add objects of real use and beauty to her own room or home by exercising a little skill and taste. It would be a mistake, too, for many persons to undertake work of this kind.

Newspaper rack made from a broiler

Clothes hamper made from a corncob basket

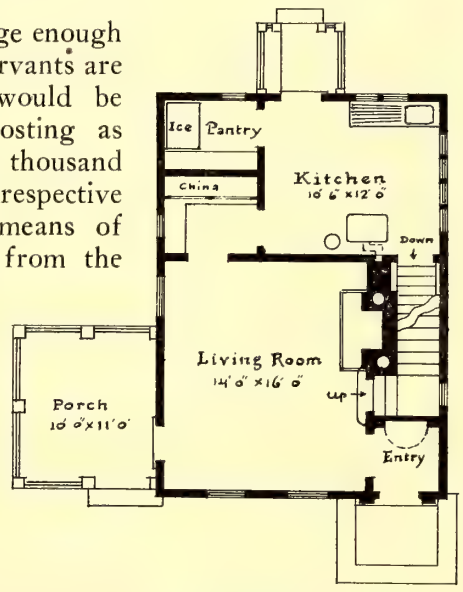
Economic utilization of vestibule space

Evolution of the Small House Plan

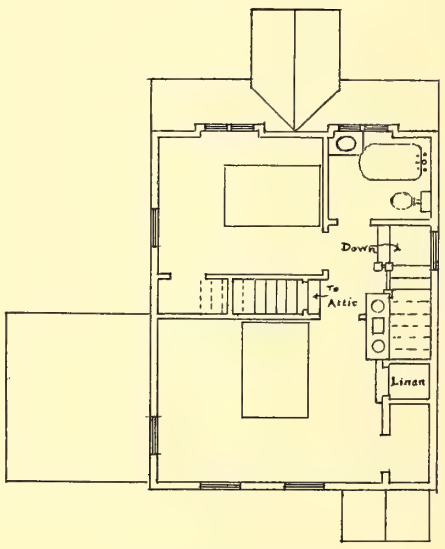
By Joy Wheeler Dow

THERE are intricate problems, many of them, in planning the small dwelling—many antagonistic propositions which have to be met, overcome, harmonized or disposed of in some way, and yet a creditable and practical way. To begin, there must be a front entrance with character—decided character and attractiveness. The old Colonial houses excelled in this respect. And there must be some sort of an entry, that the living-rooms may not open directly outdoors if the house is intended for winter occupancy. In the collection of plans selected and herewith presented, this entry has been restricted purposely to meet the object now to be stated—economy of money, of space, of labor in keeping the entry clean, for it is very often entirely forgotten in the planning of houses that they have to be swept and dusted or wiped with a cloth—every square inch of their interior surface—at frequent intervals, and that entails hard work for somebody.

If it be a cottage large enough for one to think that servants are to be employed, as would be likely in a cottage costing as much as seven or eight thousand dollars — see these respective propositions—then a means of reaching the entrance from the kitchen without traversing the rooms should be provided. But the smaller propositions are intended for the extremely small and unconventional ménage, without servants, and particularly for the ever enlarging class of cultivated people in America whose incomes remain stationary or else dwindle at an inverse ratio, but whose very cultivation prevents their going backward. And this class is subdivided into families of three, two and even one adult, as in the cases of spinsters and confirmed bachelors, who are practically obliged to live alone, and who need homes very badly. Many estimable men and women are either driven into boarding houses or the homes of relatives for the lack of knowledge of just such an economical building proposition as the one illustrated in Fig. 1, estimated at twenty-five hundred dollars, and wherein perfect comfort and independence could be enjoyed.



First Story Plan.



Second Story Plan.

1—A $2,500 proposition

This compact and carefully studied arrangement of housekeeping accommodations incorporates about all the desiderata of a cottage plan. There must always be the generous living-room, and it should have a fireplace. The saloons of steamships and the living-rooms of many old-time homesteads are accustomed to being transformed into dining-rooms three times a day without the slightest prejudice to their self-respect and why not the living-room of a tiny dwelling? It makes, moreover, one less room to furnish and keep clean and heat. A parlor is not a necessity.

The intervening china closet which separates the living-room from the kitchen of this cottage is, however, an indispensable feature of every cottage plan, and there must be a kitchen closet or pantry besides, and a place for the ice chest other than in the cellar. In the more generous layouts accompanying, the ice chest is always given a convenient niche close by the rear entry.

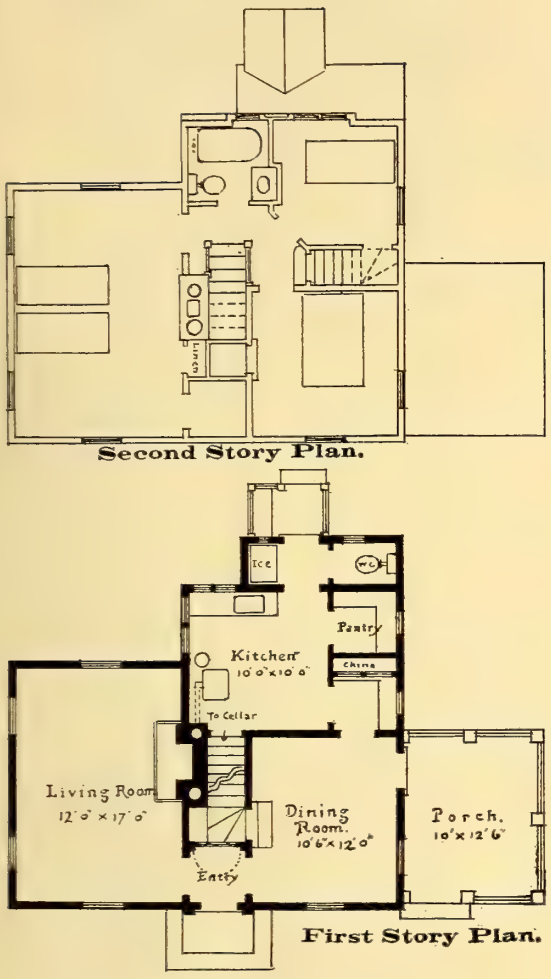
Many housekeepers maintain that the range should have a good side light. All the ranges indicated upon the different plans illustrated are thus well placed. The gas range is convenient, but not necessary if there be a coal range, and a coal range is most necessary, as every house requires a fire in it constantly throughout the summer so as to dispel that insidious dampness ever present in houses without fire and which is neither salutary nor pleasant. Consequently the gas range appears to be eliminated in problems of the strictest economy. It requires a separate connection of its own into the chimney to work perfectly, and that means a larger and more expensive chimney.

A way of reaching the cellar from the kitchen is very necessary, and for the sake of economizing space, is best made under the main staircase. An outside cellar entrance is not necessary, but it is desirable. A hall is not necessary, nor is it advisable in small quarters; but there should be a place to sit out of doors by whatever name—porch, veranda or piazza—we choose to call it.

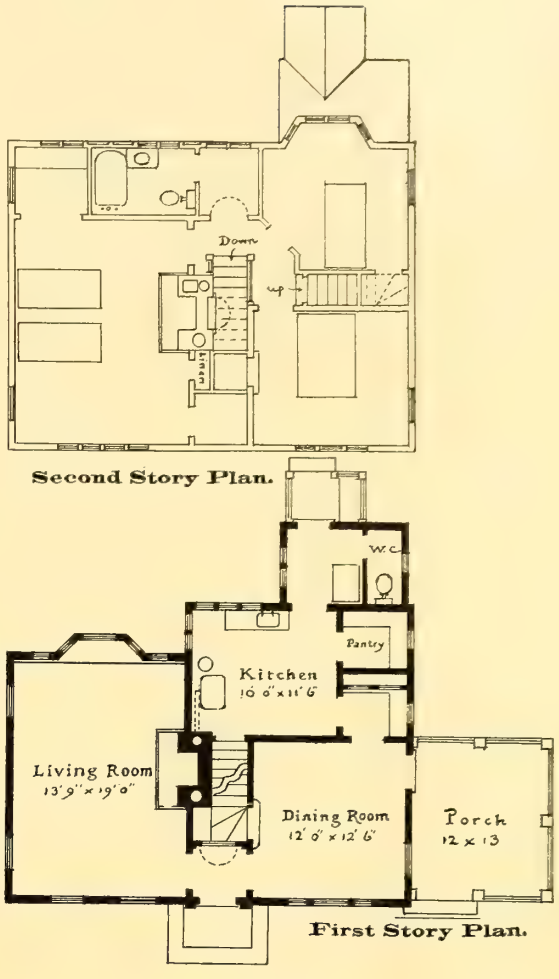
This reservation should never be contiguous to the front door, where it is proper for many business calls to be made, but should be so situated, while obtaining the best outlook afforded, as to give a degree of privacy, and the accompanying plans have been selected largely upon this account; the veranda is always private. Only the most hardened class of Americans now desire to live in public evidence.

No matter what architectural effect should be desired, it must be accomplished and still provide for a third story or attic in every respectable domicile which may be dignified by the name of a complete dwelling house. All the plans presented provide for a third story divided between a finished bedroom and an open attic. Note the stairs leading from the second story hall or landing in every case.

This triangular air chamber means coolness and ventilation for the two lower floors, impossible of attainment without something more than the flattened dead air space between the ceiling and the rafters, which is part of the bungalow propaganda. Besides, the attic is a historic tradition of the Anglo-Saxon home which can not be ignored. But before touching further upon the personal and esthetic side of cottage building there are still other physical



2—A $3,500 proposition

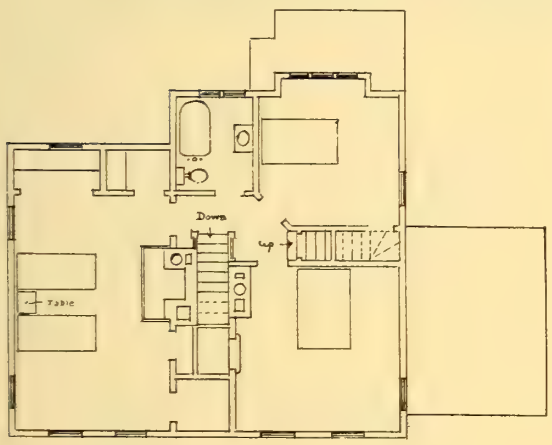


3—A $5,000 proposition

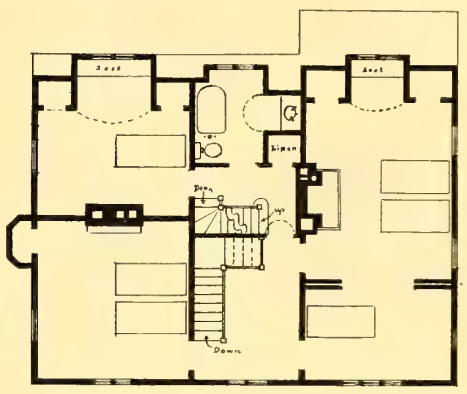
Each bedroom must have a closet, and there should be a linen closet in addition; nor must we crowd the chimney stack, because an eight inch by twelve inch tile-lined flue there must be for the fireplace in the living-room or any other fireplace of ordinary dimensions, i. e., one foot four inches deep, two feet eight inches wide by two feet and six inches high. A cottage is ruined by too small a chimney stack above the roof, that is, architecturally ruined. The chimney has a mission in the psychical world to perform which is related only in a distant degree to that of carrying away for us the products of combustion. Make it bigger than is necessary, the bigger the better. Half the charm of the English cottages is their enormous chimneys. So that a little money has to be expended, not for show exactly, but to satisfy the instincts of a cultivated mind which craves suitable companionship in all its surroundings. The hearth, the fireplace, the chimney—all these mean home as gas logs, electric lights and bronzed radiators never can.

In only two of the plans forming the evolution from a twenty-five hundred dollar proposition to one for eight thousand has a rear stairway been provided, because the rear stairway, like the independent communication between kitchen and entrance, is only indispensable where there are servants or likely to be servants. In the very-low-priced cottages back stairs would come under the head of luxuries, and a luxury somewhat dragged in. The main stairway inclosed and reached from the dining-room, where there is one, secures all the privacy there is needed, and anyone may escape up this inclosed stairway entirely beyond the range of vision from the living-room, where an unexpected caller may be waiting. In an artfully contrived niche within the staircase coats and hats may be hung, receiving light from a leaded-glass transom, which in turn receives its light from a transom over the front door. Hats and coats may also be hung in the entry and rubbers deposited in a low closet under the stairs and opening into the entry.

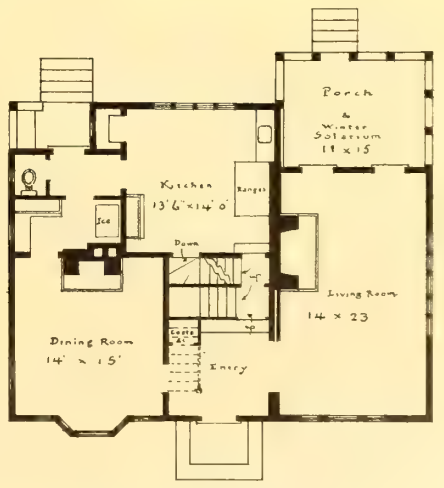
The thickness, or rather absence of thickness, of the exterior walls indicates to everybody at all familiar with plans that these houses are intended to be frame houses finished with either weatherboards, shingles or stucco.



4—A $6,000 proposition



SECOND STORY PLAN.

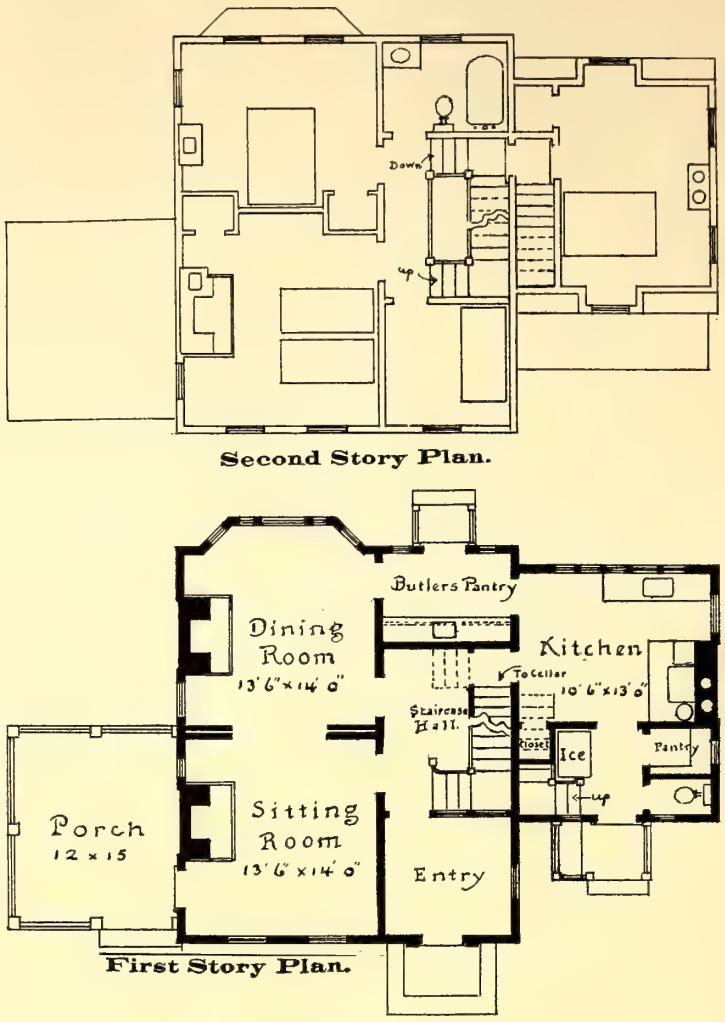


FIRST STORY PLAN.

5—An $8,000 proposition

Of the three, stucco has become the cheapest medium, but there is no very great difference between them. And now a word about historic architecture, for other kinds are worthless for dwelling house construction.

If our plan does not admit of historic treatment, then we must change the plan or else discard it, and yet of history, tradition, folk-lore, and all that delightful train of ministers of grace, people habitually think last. They do not understand that without these life-giving agents to the design nothing really successful can be achieved. The elevations which go with and belong to the several floor plans exhibited are historic and orthodox elevations, absolutely free from cant and modern invention. Where a left-handed feature has offended in the process of assimilation of architectural design, that feature has been promptly lopped off, as the Bible also has advised. And only those features have been retained or added that can be worked out true to their antecedents.



6—A $7,000 proposition

Heretical though it may seem, a floor plan is really of secondary importance to that of its architectural integument, and it must be worked out to fit and accommodate itself to some historic model of excellence, for the latter is the inviolable factor. Of course, it is infinitely more difficult to do this than to force issues—solutions. It is much easier to force a balance of a double-entry set of books than to patiently hunt for the missing discrepancy. Yet when the exterior and interior plans do finally come together, and balance with a precision approaching the click of a piece of machinery, what a satisfactory sense that everything is all right supervenes!

The cost of a dwelling is computed by the cubic space it occupies, and to obtain the maximum amount of room and convenience, together with the minimum amount of expense, is the object of the present writing.

A Formal Garden and Pergola Designed by An Amateur

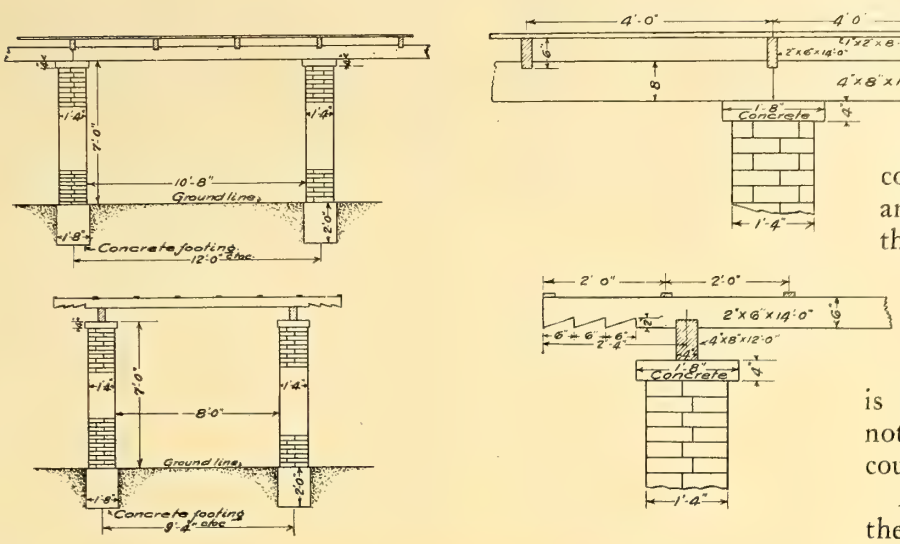
By Alexander R. Holliday

THERE are few occupations that give more satisfaction than the expression in construction of one's own ideas. Landscape architecture offers a particularly inviting field for this enjoyment by the amateur on account of the small expense involved as compared to building operations and the ease with which mistakes may be corrected. The amateur in starting will find that it is easy to decide on general plans, but difficult to decide on detail dimensions. The literature of landscape architecture is replete with beautiful photographs showing general effects but barren of detail dimentioned plans and specifications. As one searches, the impression is borne in that perhaps the literature was written by professionals who earned a livelihood by supplying the detail drawings, the appetite for which was created by their beautiful illustrations.

The accompanying illustrations show a part of the development of a country place by amateurs near Indianapolis. The ground had formerly been a corn field bordering a woods

The pergola is designed on the arc of a circle as a background to a tennis court

in which the house was located. On account of the existing driveways the plot of ground available for the formal garden had an irregular shape toward the front. The tennis court was made standard double court size and the pergola designed on the arc of a circle



Sections showing details of construction

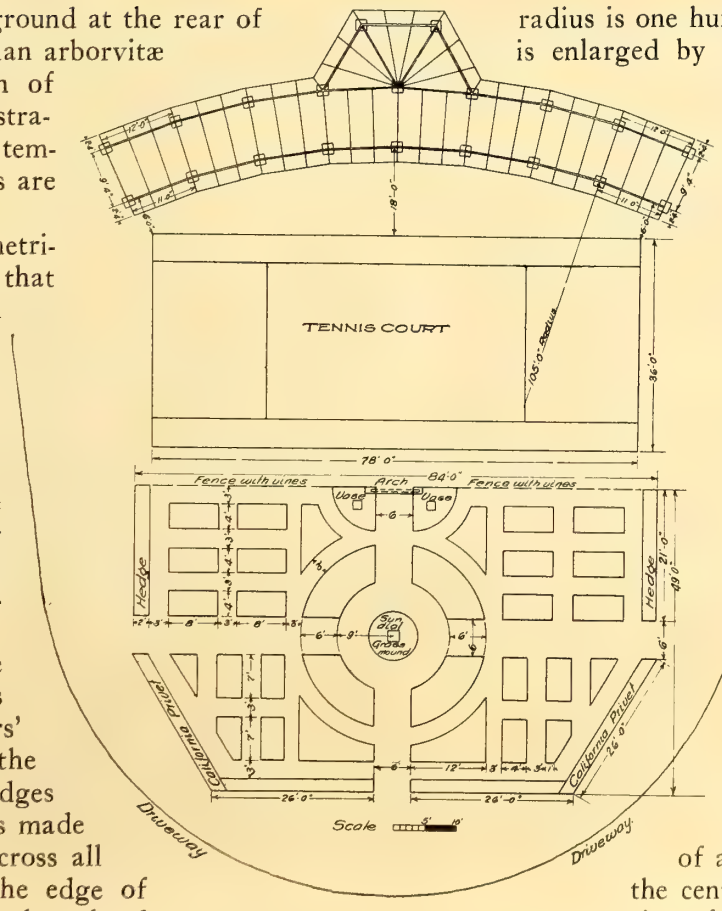
to maintain. Care has been exercised in planting the beds so that color contrasts are not jarring and so that the flowering time of the beds is well distributed over the garden. Tall plants are placed in the outside beds away from the sundial. The tennis court is a turf court, which, although not so good for tennis as a skin court, is better in appearance.

As shown on the plan and in the illustration, the pergola is built on the arc of a circle whose

Looking across the garden to the tennis court and pergola

to fit the court. For a background at the rear of the pergola a hedge of Siberian arborvitæ has been planted. A screen of sunflowers shown in the illustration forms this background temporarily, while the evergreens are small.

The formal garden is symmetrical about the two broad paths that run at right angles to each other and center at the sundial. A few beds, whose sides are made by arcs of circles, carry out the idea of the design centering on the sun-dial. The ground has a slight slope of about one foot to the long dimension of the garden, which has proved advantageous for storm water drainage. All paths are in grass. The four feet by eight feet beds are considered, after two years' experience, to be superior to the smaller ones. Keeping the edges of the beds straight in line is made easy by stretching a string across all edges on the same line. The edge of beds on arcs of circles have not been hard



Plan of garden, tennis court and pergola

radius is one hundred and five feet. At the center it is enlarged by two extra columns, forming a bay, which gives a space for chairs and tea table. The columns are built of No. 2 Colonial dark red brick on gravel concrete footings. This brick ordinarily retails for eight dollars per thousand. The joints are made of white mortar and are gouged out. This style of joint and color of mortar in contrast with the dark brick gives a series of distinct lines to the column. The column is finished off with a concrete cap molded in an oiled frame form made for the purpose. All the overhead work is No. 2 yellow pine, rough finish, stained a dark brown. The floor is made of the same brick as the columns. The total cost of the pergola was under three hundred dollars.

In reviewing the work after the lapse of several years, the principal mistakes appear to be the placing of a column instead of an open space at the center of the pergola and in making the size of some of the beds too small.

Furniture for the Small Home

By Edith Haviland

FURNITURE for the small home should always express a certain fitness for its position. If chairs, tables and sofas were gifted with speech and allowed to present this matter from their own standpoint, we should, no doubt, be forcibly enlightened. For no matter how meritorious an example of the cabinetmaker's art, if it be inharmoniously companioned it must appear at a disadvantage.

The glamour that surrounds a piece of furniture of a distinctive period often obliterates the question of suitable environment, else we would not so often see, in juxtaposition, chairs that were shaped to suit the luxury-loving monarch of a long-past century and the severe lines of the Mission, or the classic suggestions of the First Empire associated with informal designs in reed, rattan and willow.

These incongruities in furnishing are so conspicuous in the concentrated areas of the small house that every choice in the necessary pieces of furniture becomes a matter for careful thought on the part of the home maker, and not only the origin and historical significance of each article should be looked into, but every detail of construction and finish.

Each division of the house, hall, sitting-room, chamber, dining-room, has its own office of usefulness for which the furniture must be selected. Even the fireplace has specific fittings of its own, which, rightly chosen, enhance the attractiveness and comfort of the room.

In the small home good taste does away with elaborate detail, showy decoration, tawdry superfluities. If expense is an unconsidered factor a finer quality and greater perfection of detail may be provided. Simplicity does not always signify cheapness.

When mahogany furniture is to be adopted in a dining-room, its best setting is white-painted woodwork. This scheme is unalterably associated with our Colonial forefathers, and the tradition has not been improved upon. In the illustrations two different wall treatments are shown—one with a figured covering and plain over-curtains, the other reversing this plan by having the wall plain and the window hangings in a self-woven or semi-figured material. Each has its merits, the choice usually turning on a personal preference.

In illustration No. 3 the feet of the table and chairs are of claw-and-ball type, with a Chippendale back to the chairs. The white mantelshelf is simply decorated with brass candelabra and two Chinese jars. The olive green that predominates in the foliage paper is repeated in the velour curtain that is drawn across the window at night. The round linen table mat that is used as a "between-meals cloth" is embroidered in white, and an iridescent glass vase holds some garden flowers. There is no "studied simplicity" in this room, but an attention to comfort that is based on artistic principles.

The other dining-room illustrated in No. 8 has an antique drop-leaf card table brought into service for a dining table. To make it of more practical value the legs have been fitted with casters. The sideboard is a family heirloom, and to supplement these two pieces of furniture harmoniously some reproductions of Sheraton chairs were bought in the unfinished wood at four dollars and fifty cents for the arm chairs and three dollars for the side chairs. At an extra cost of two dollars for each chair a mahogany stain was added and rubbed down. The buff-colored walls, brown silk curtains and dull red of the mahogany furniture were enlivened by the bright old silver and glass distributed on the table at meal times and used on the sideboard for decoration.

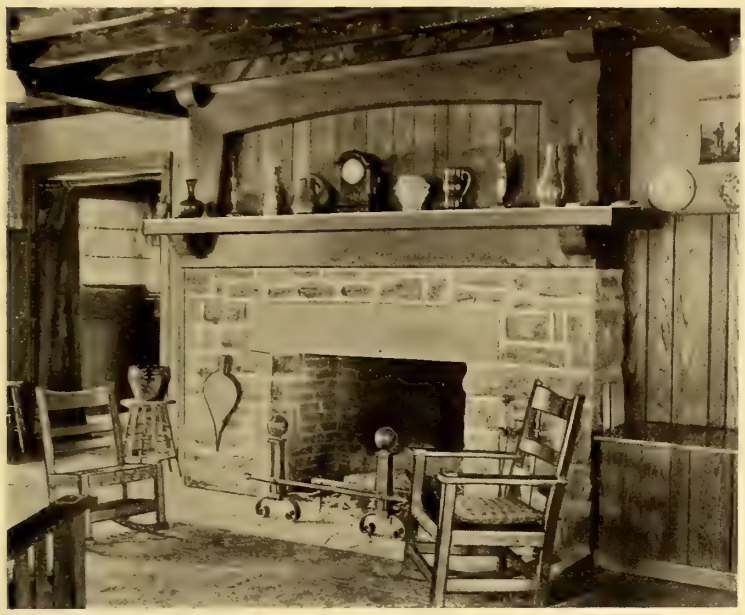
The hall of the ordinary small house is usually devoid of interest, but illustration No. 7, with its white-paneled wainscot and cozy fireplace corner, is full of charm. The round table might, perhaps, be better placed at one side of the stairway, but its lines are so good that it can afford to be made rather a prominent feature. The plainness of the walls is relieved by the figured curtain at the wide doorway, and a pleasant vista is had of the dining-room.

A question that is still under debate as to whether Mission furniture has come to stay or will wane in popularity has its most decisive answer in the increasing amount that is sold every year. It has passed beyond the experimental stage, when it threatened to be too cumbersome for ordinary homes, and has been modified in its proportions so that it is not out of place even in the small dwellings. The side chair with a leather seat in illustration No. 4 can be used for the dining or sitting-room, and may be had in two different finishes. The price is seven dollars and fifty cents.

The comfortable arm chair in illustration No. 9 is on the well-known Morris pattern, but of Mission make. Such a chair costs from twenty-four to thirty-four dollars, according to the cushion covers and their filling.

The widespread use of Mission or Craftsman furniture has caused almost a

1—Wrought-iron andirons of a substantial pattern



2—A homelike fireplace

3—Comfort based on artistic principles

4—The overmantel makes a picturesque setting for some old pewter

5—The old-time banjo clock is an interesting mantel decoration

6—Some built-in bookcases

7—Not an ordinary hallway

8—Old furniture harmoniously combined with new

9—A comfortable chair for afternoon tea

revolution in interior furnishings—rugs, curtains, portieres, even picture frames, lamp mats and table covers. All of these have now special designs to accompany the plain lines of the furniture, and set patterns in place of the naturalistic. Possibly the enthusiastic reception of the Mission furniture has had something to do with the waning interest in Oriental effects, and the abolition of the once famous cozy corner.

In the interior view of a study in a summer home where the walls are paneled with sheets of birch bark (illustration No. 9) a good type of chair for the small home is shown. This is cane-seated, and with the back also caned, with wide flat arms on which a book or magazine may be rested. When serving a cup of tea this chair is also a favorite. It is made with three different stains, green, natural oak and Flemish, at a cost of nine dollars and fifty cents. A writing table built on the same plan as the chair is used in this room with a Mission side table. One need not, indeed, go to considerable expense to furnish a home tastefully.

10—An attic sitting-room

The Use of Concrete in the Building of the Small Country House

By Benjamin A. Howes, C. E.

CONCRETE, the favored building material of the Romans, is now in widespread use for modern engineering works, especially when combined with properly incorporated steel rods, making reinforced concrete. We see it to-day all about us, but scarcely realize its rapid adoption in everyday life. Following its extensive use for bridges, dams, factories and sidewalks, it is now becoming a popular building material for homes. Several large country houses have been built of reinforced concrete, complete from cellar to and including roof, floors and partitions, and have been lived in for a term of years to the owners' entire satisfaction. This proof of its value from the artistic and economical points of view for large houses immediately raises the question as to whether it is available for the small suburban or country house. It is, and increasingly so. But instead of using the houses already built throughout of reinforced concrete for enthusiastic and far-sighted owners to illustrate what may be done, and explaining how they might be modified to suit the conditions imposed upon the designer of a small house, the purpose of this article is to begin at the other end, showing the general tendency among the most progressive architects toward the use of concrete—in various forms and varying quantities, to be sure—and toward the general appearance and lines of construction that are natural to reinforced concrete. The value of concrete and its derivative stucco is fully demonstrated by the attractive appearance and practical advantages of these houses.

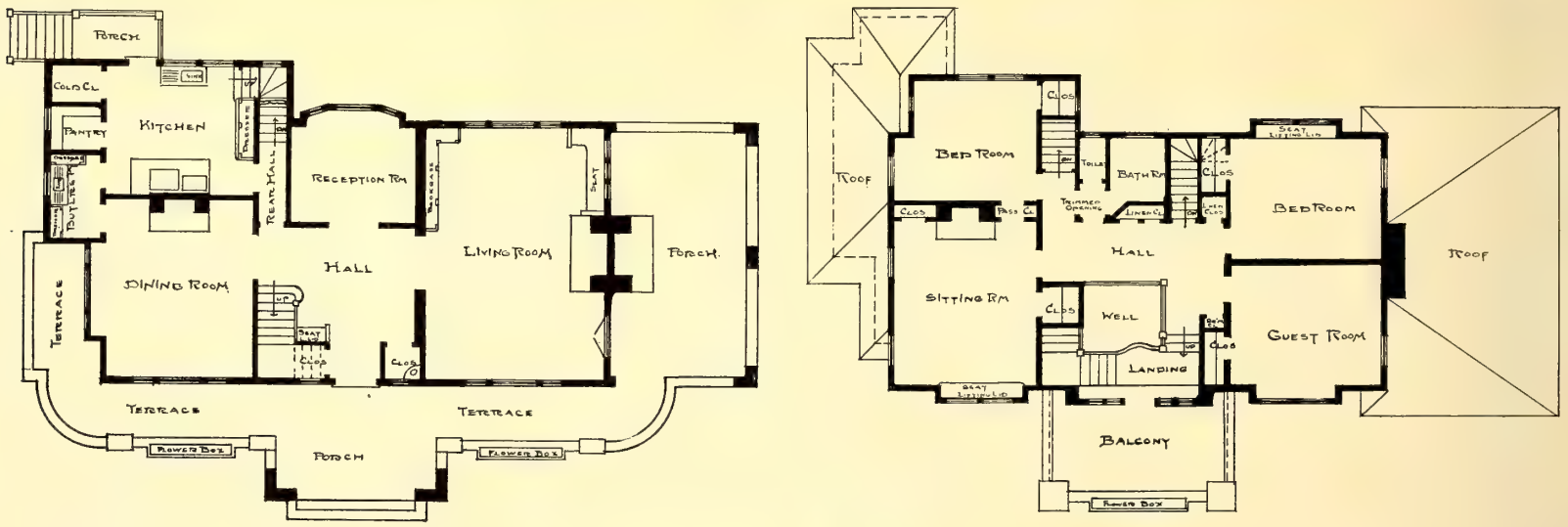
1—The porch of Mrs. Julia E. White, of Montclair, New Jersey shows a Spanish influence

In order to take up the subject intelligibly it is well to begin with a few words on the nature and relation of the materials treated and the unavoidable technical terms. Portland cement is an artificial product made by mixing, burning and grinding proper proportions of lime rock and clay rock, the result being a gray powder which has the peculiar property of hardening, when water is added, into the consistency and appearance of natural stone. It is sold in the market in bags of about one hundred pounds each and in wooden barrels of four hundred pounds. There are many excellent brands of Portland cement made at different factories differing slightly except in color. There is no benefit and some practical disadvantages in using clear or neat cement; it is the practise to mix cement with sand to make mortar, and with sand and broken stone or gravel to make concrete. The underlying rule is to use such a proportion of cement as will fill the voids or interstices between the grains of sand in making mortar, and in making concrete to use such a proportion of mortar to the broken stone or gravel as will fill its voids. Mortar is used for laying brick, stone, for finishing smoothly concrete surfaces, and for plastering where exposed to the weather. In this position it is commonly called, in this country, stucco, although technically stucco is a particular kind of plaster designed to be worked into elaborate forms resembling stonework. This exterior plaster of cement mortar should not be confused with interior plastering, which is usually of lime and sand or plaster of Paris. We may term cement mortar an artificial sandstone, as concrete is an artificial conglomerate stone, their great advantage being that we may work the artificial stones while plastic. Where a mass of material like a step or a wall is required, we follow nature's operation by making a conglomerate stone.

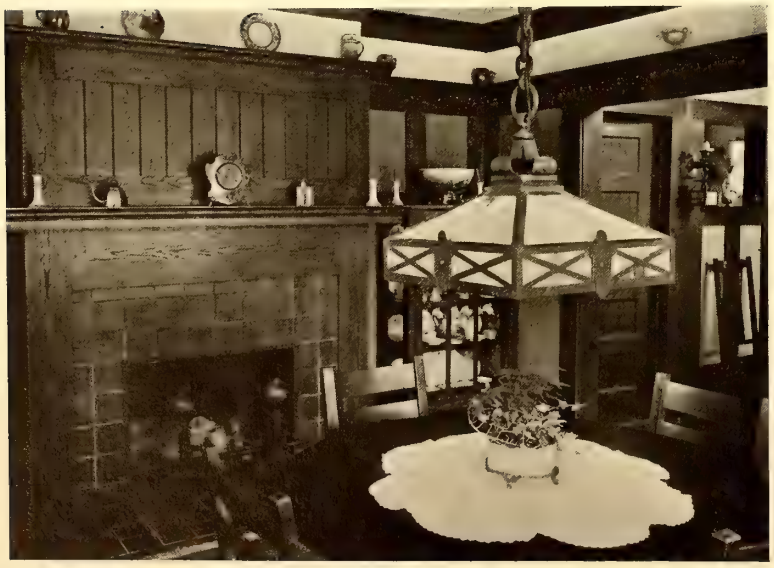
The various manufacturers of Portland cement issue pamphlets describing in detail the proper proportions and mixing of mortar and concrete for various works. A common proportion is one part of cement by volume to three parts of sand, while concrete usually takes the "one-three-five mix," meaning one part of cement, three parts of sand and five of gravel or broken stone. The process is to thoroughly mix the dry sand and cement, add water until plastic, but not "sloppy"; if concrete is being made the dry sand and cement is spread on top of five volumes of stone, and the whole turned over three or four times with shovels, water being added during the second turning to bring the mass to such a condition of softness that when it settles into place some water will rise to the top, in other words, to the consistency of a soft mud pie.

The readers of AMERICAN HOMES AND GARDENS are probably familiar with the method of placing concrete—between wooden walls or forms, which are removed when the mass hardens. Reinforced concrete refers to the placing of small steel rods in the forms before the concrete is poured in. The tight grasp of these rods by the crystallizing mass

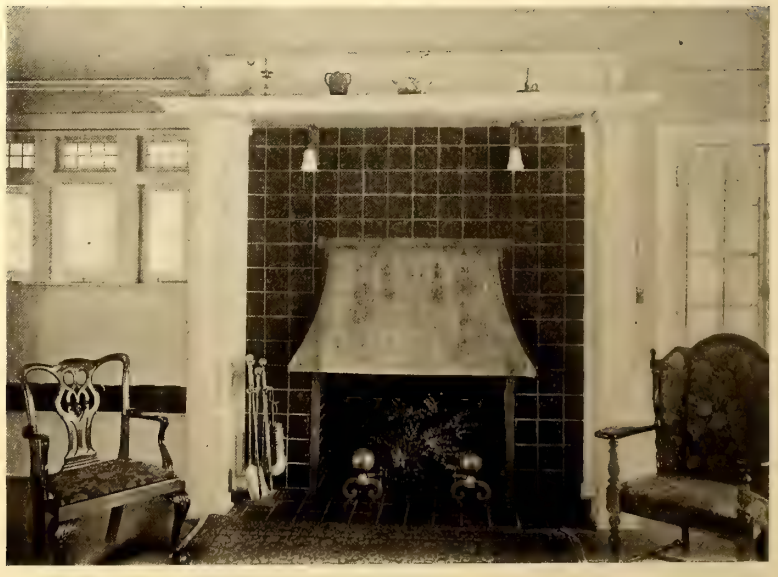
2—Mrs. White's house presents an interesting and appropriate style of architecture for concrete construction



3—A large sun-room is the interesting feature of the first floor plan

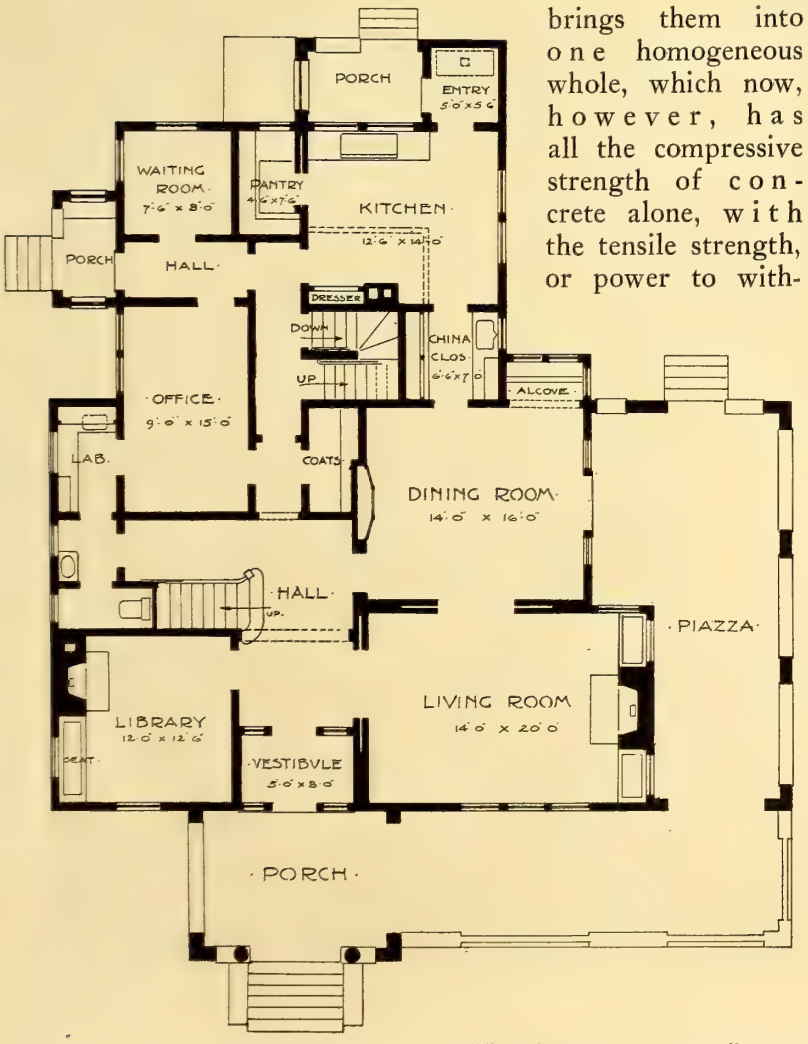


4—The dining-room is finished in Flemish oak and has a large open fireplace with green Grueby tile facings

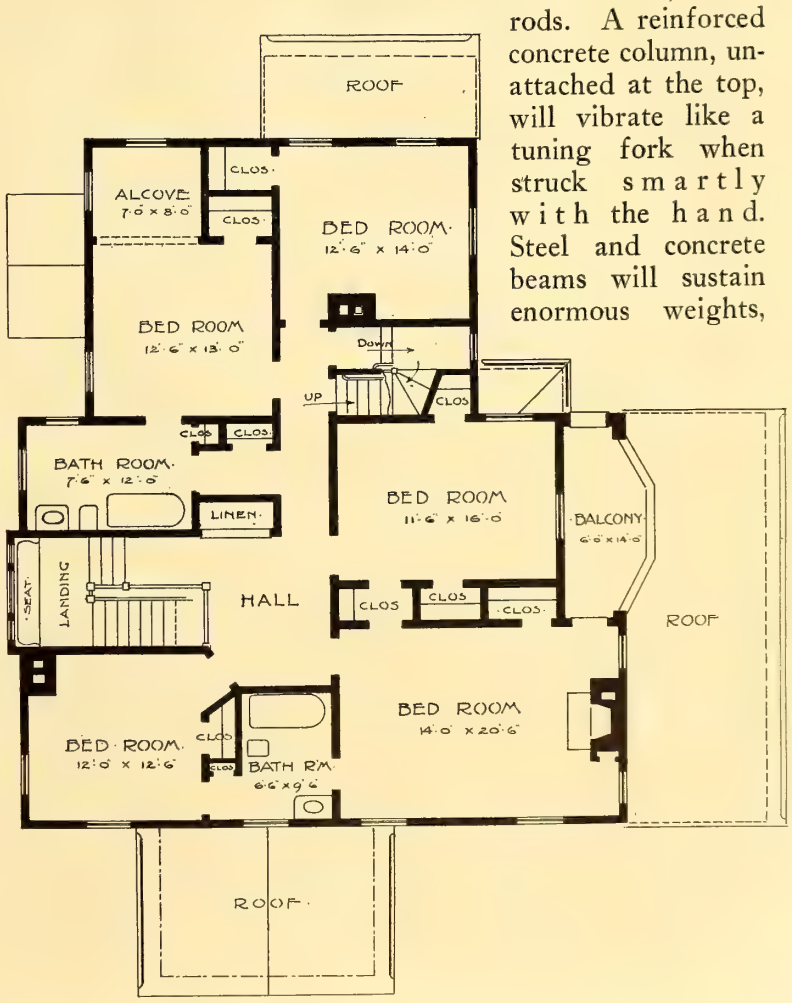


5—The fireplace is a feature of the living-room with its green Grueby tile facings and a Dutch hood of hammered-brass

6—The low arched porch and piazza of Dr. Clarence Ordway's house at Winchester, Mass., have the true lines of the reinforced concrete arch



brings them into one homogeneous whole, which now, however, has all the compressive strength of concrete alone, with the tensile strength, or power to withstand strains, of the rods. A reinforced concrete column, unattached at the top, will vibrate like a tuning fork when struck smartly with the hand. Steel and concrete beams will sustain enormous weights,



7—The plans are economically arranged and the suite of offices is complete

8—The hall has an ornamental staircase of mahogany

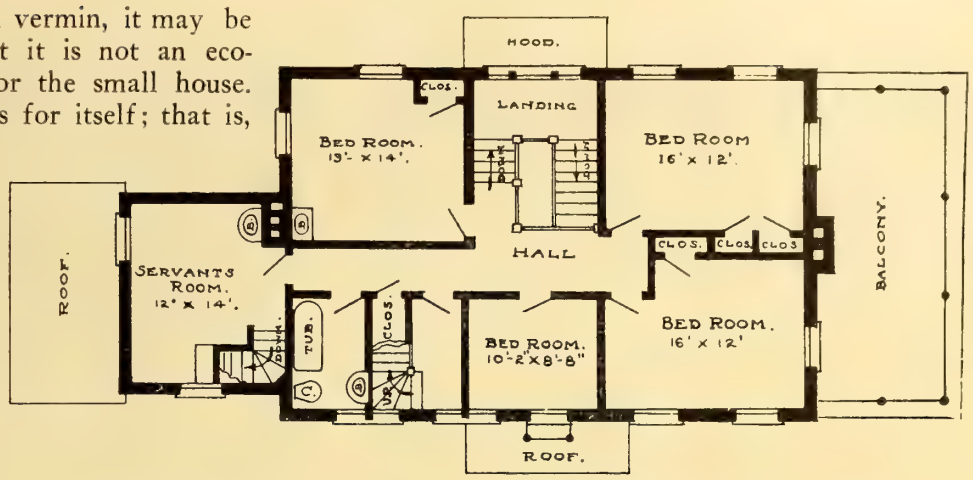
9—The living-room is trimmed with mahogany, with walls hung with golden brown Japanese grass cloth

thus making very wide spans possible. In spite of the fantastic claims of the press agent, it is not as yet possible to make a house all at once by pouring concrete into one complicated mold; but certainly it is possible to proceed with great rapidity, setting up forms with the ducts for wiring and heating and piping already in place.

While the monolithic concrete house is certainly the ideal as regards permanence and stability, freedom from attack

10—The walls of the dining-room are covered with a tapestry paper to the plate rack, above which a Japanese grass cloth is used, with pleasing effect

by weather, decay and vermin, it may be said very frankly that it is not an economical proposition for the small house. A large operation pays for itself; that is, the economies in the use of concrete as to labor, lumber for forms, etc., in a house to cost twenty thousand dollars or over, will make it compare very favorably with a house of brick, or even frame. But for the small house all the breaking in



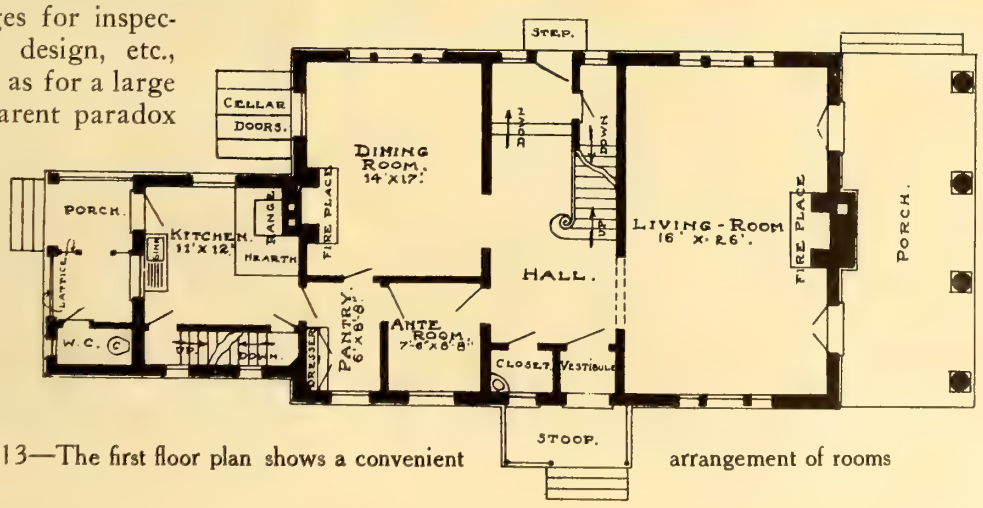
11—The second floor plan of Mr. Mebus' house shows a servant's room separate from the rest of the dwelling

monolithic reinforced concrete construction is not the only one in which concrete can profitably be used. Hollow tile, of concrete or clay, is indeed to-day very largely used in those larger houses for interior partitions, and they are coming largely into use for exterior walls of small houses. In fact, it might be

12—The restful and simple house of Mr. Charles F. Mebus at Glenside, Pennsylvania, shows off charmingly against a background of trees

of laborers, the charges for inspection and engineering, design, etc., will be nearly the same as for a large house. Thus the apparent paradox may be easily sustained, that the owner can not afford to build a large house anything but fireproof, while he can hardly afford to build his small house entirely fireproof.

But certainly



13—The first floor plan shows a convenient arrangement of rooms

possible to construct a kind of order of types of construction for the small house in which the decrease in the cost is accompanied by a diminishing fire protection or length of life, in every item of which, however, there are to be traced very definite advantages from the use of con-

14—The entrance porch is covered with a shingled hood

15—A glimpse of the piazza showing the reinforced concrete columns

crete or its derivative stucco. First in such a list would be the house with reinforced concrete skeleton and floors, and cement block or tile exterior.

Not much can be said for the appearance of the ordinary cheap cement block uncovered, though as a basis for "exterior plaster" it is quite pleasing. It is entirely possible, however, to construct true concrete blocks at somewhat higher labor cost (wet mix), and finished either in the exact texture of stone or any of the frank concrete finishes.

Cement mortar or concrete hollow tile ordinarily covered with plaster are a third possibility. The superiority of cement to terra cotta tile lies in the color, which, if the plaster flakes off, does not show unpleasantly; in the resistances to moisture and frost; and that the expansion under heat and cold is the same as the covering cement mortar.

The important point, however, is the skeleton, and the incombustible outside is the least important. The practise of making a cement block or tile outside with wooden frame and floors, and calling it "fireproof," can not be too strongly deprecated. Probably that construction for

16—The living-room has a fireplace built of Tiffany brick laid in wide white mortared joints

17—An ornamental staircase of Colonial style is a feature of the hall

a small house which combines the maximum of economy with the minimum of fire risk is that of reinforced concrete skeleton, concrete or tile floors and wooden roof. At some increase in cost asbestos or tile shingles may cover the wooden frame. The outside of such a house may be again stucco on wire lath, which is very attractive.

Stucco and wire lath, with wooden frame and floors, gives effects which are extremely pleasing, and to the owner who is not concerned to have an unburnable house, fully satisfactory. But such a house, though indubitably covered with cement mortar, should not be called a "concrete house," since the word carries with it a very strong suggestion of safety which the structure does not possess.

Nevertheless, one would never cavil at the prevalence of the stucco on wood, or the allied half-timber construction, since it represents for many owners the only possibility

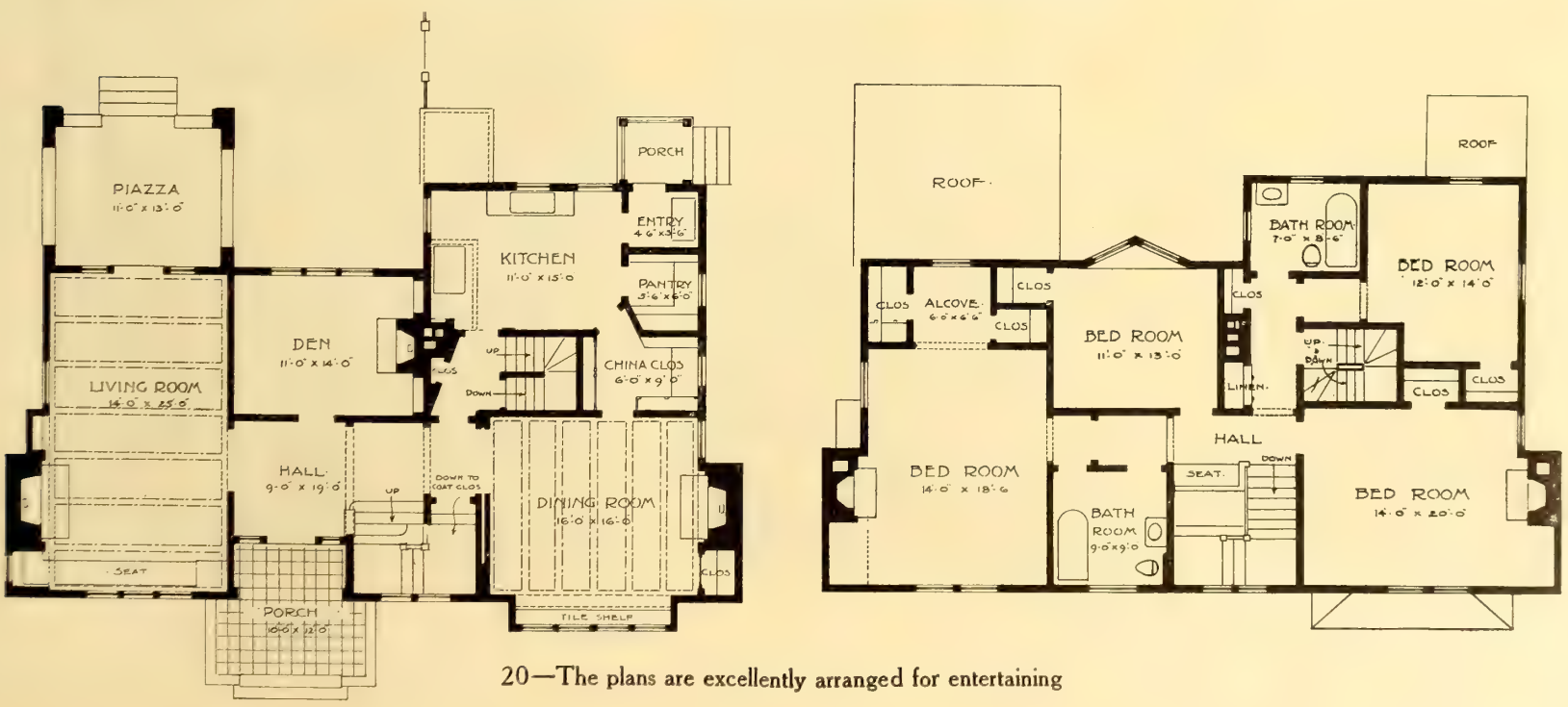
18—The soft brown of the woodwork of the dining-room brings out the Delft blue of the wall covering

19—An effective grouping of the windows relieves the broad exterior surfaces of the house built for Mr. Charles E. Starr at Winchester, Massachusetts

of building a house of the necessary size; it is certainly a most charming feature of the landscape, and prepares the eye for all-concrete work, and by its increase helps to bring into more general, and hence more economical use, that ideal building material, reinforced concrete.

The following typical and attractive houses are all in some one of what may be called these subsidiary forms of concrete construction.

In the very interesting house (Figs. 2 and 3), designed by Mr. Dudley Van Antwerp for Mrs. Julia E. White, of Montclair, N. J., we have an example of the characteristic use of stucco. The color scheme is an ivory-gray, with roof of moss green shingles, and the front, especially the porch section (Fig. 1), shows a Spanish influence in its rococo curves; together with an appreciation of the good effects to be got by broad surfaces of pleasant texture. The window grouping is



20—The plans are excellently arranged for entertaining

21—The entrance, with low arch protecting the door, is suited for summer and winter uses

22—The house is well placed and lies close to the ground

especially good, indicating a feeling for concrete design in which economies of construction call for broad surfaces and concentrated window space. The hall, den and dining-room (Fig. 4) are finished in Flemish oak, with a rough wall covering of two tones in cream. The living-room woodwork is in ivory-white, and the two-tone striped wall covering makes a good foil to the fireplace (Fig. 5) facings in green Grueby tile and the Dutch hood of hammered brass.

For the house (Figs. 6 and 7) at Winchester, Mass., owned by Dr. Clarence E. Ordway, the architect, Mr. Robert Coit, has obtained a pleasant variation from the usual suburban square house. The low arches of veranda and porch have the lines of the true reinforced concrete arch, and harmonize well with the general proportions and the slope of the roof. Here the exterior is a plain gray, the roof of dull greenish brown shingles. The hall (Fig. 8) is finished in mahogany, with a dado of green Japanese grass cloth, and a medallion wall paper of two tones in green. The same mahogany finish is combined in the living-room (Fig. 9), with a red birch fireplace and carved panel above the mantel. The wall covering is golden-brown Japanese grass cloth. The dining-room (Fig. 10) is also in mahogany, with a wall of tapestry effect up to the plate rack, above which a Japanese cloth of a golden-brown tone extends to the beamed ceiling. The library is also in mahogany.

Although in the photograph the house does not appear to

23—A green-gray wall with woodwork of oak of soft brown finish is the treatment of the living-room

24—The fireplace is the feature of the library, with its Moravian tile facing

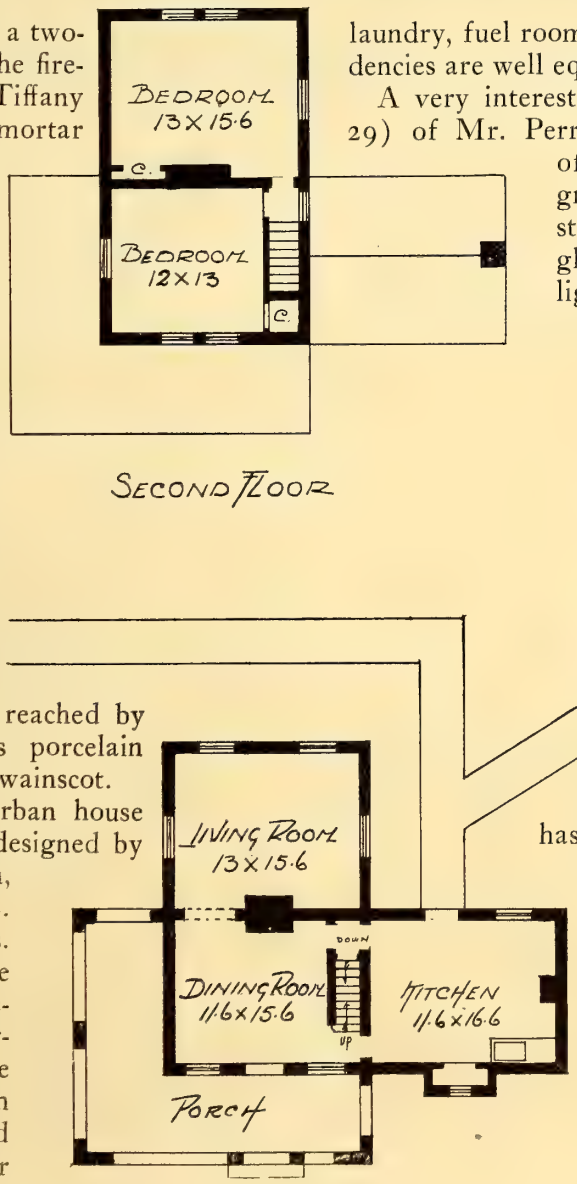
be large, its good planning gives room for five bedrooms and two baths on the second floor, and a servant's room on the third floor. Kitchen and dependencies are complete, and the suite of offices is equipped in every detail.

The restful and simple house (Figs. 11, 12 and 13) of Mr. Charles F. Mebus, at Glenside, Pa., shows off charmingly against its background of great trees. The architect, Mr. Lawrence Visscher Boyd, of Philadelphia, Pa., has wisely made his windows with their dark trim and clever grouping the element of variation in the smooth gray stucco wall. The shingles of the roof are in different shades of brown, probably obtained by dipping them in different shades of stain before laying. The woodwork of the hall (Fig. 17) is of a soft brown, and the walls are tinted in harmony. As for the living-room (Fig. 16) it, too, is in soft brown, with a two-toned brown wall paper. The fireplace and hearth are of Tiffany brick laid in wide white mortar joints and finished with a heavy mantel. In the dining-room (Fig. 18) the soft brown of the woodwork brings out well the Delft blue of the wall. Above the plate rack there is a tapestry effect of fruits and flowers. The kitchen and dependencies are fully fitted with modern conveniences. The second floor is finished with white trim and mahogany doors. It contains four bedrooms and bath, and over the kitchen extension a servant's room is reached by stairs. The bathroom has porcelain fixtures and tiled floors and wainscot.

An unusually pretty suburban house (Figs. 19 and 20) is that designed by Mr. Robert Coit, of Boston, Mass, for Mr. Charles E. Starr, of Winchester, Mass. Here again the effective grouping of the windows relieves the broad exterior surfaces. The inviting entrance (Fig. 21) with its low arch protecting the door is suited for both summer and winter uses. One regrets that a charming low lying house (Fig. 22) like this should not look out from wide spreading lawns, it would be set off by them so well. The interior is largely finished in oak; the hall in a natural tone, with wall covering of blue-gray burlap up to the chair rail and a tapestry effect above. The library (Fig. 24) is in Mission finish, paneled with oak in a soft brown tone. Bookcases are built in, and above them the walls are paneled with rough plaster tinted a golden gray. The fireplace is of rough brick with a Moravian tile panel. The living-room (Fig. 23) has gray-green walls, with oak woodwork of soft brown finish, and a beamed ceiling. The fireplace is faced with gray cement. The dining-room is finished in mahogany with fireplace of green Grueby tile. On the second floor are four bedrooms and two bathrooms, and the cellar contains laundry, fuel room and heating apparatus; the kitchen and dependencies are well equipped. The house cost nine thousand dollars.

25—The house before the alteration

26—The house after the transformation



27—Plans after the improvements were made

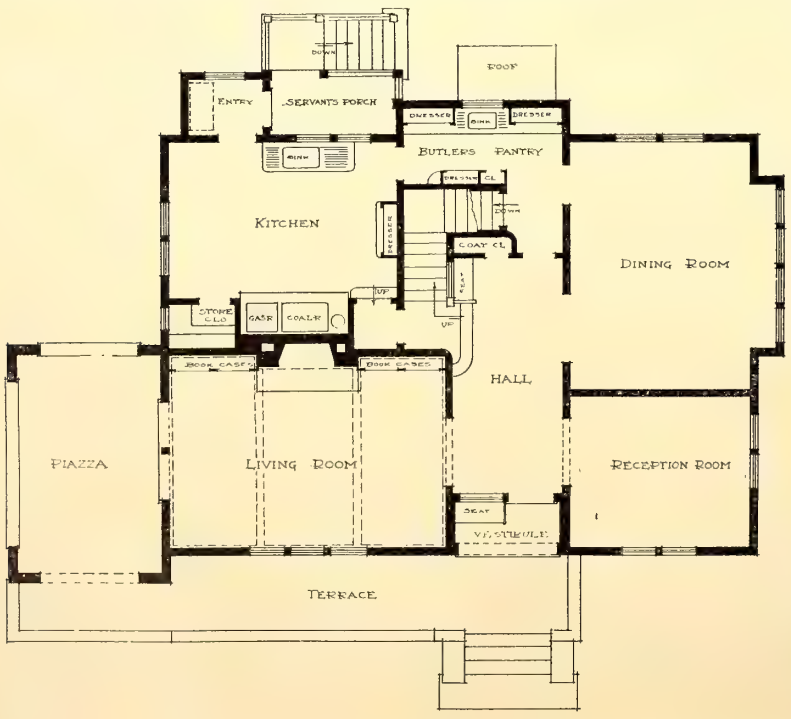
A very interesting exterior is that of the house (Figs. 28 and 29) of Mr. Perry Todd, Montclair; architect, Mr. A. F. Norris, of New York. The color scheme is gray and gray-green. The walls of the first story have gray stained shingles, with a gray-green trim. The shingles are applied to the roof so as to give the play of light and shade of a thatched roof. The recessed entrance with its low wall extending along the open terrace is very attractive. The entire first floor is finished in soft brown oak. A beamed ceiling in the living-room (Fig. 30) is set off by the plastered walls tinted in harmony. The hearth and fireplace are of brick with a heavy mantel supported by corbel brackets; on either side is a built-in bookcase with leaded glass doors. The second floor has four bedrooms and two bathrooms, and off the owner's room there is a solarium. The third floor has servants' quarters and a couple of storage rooms.

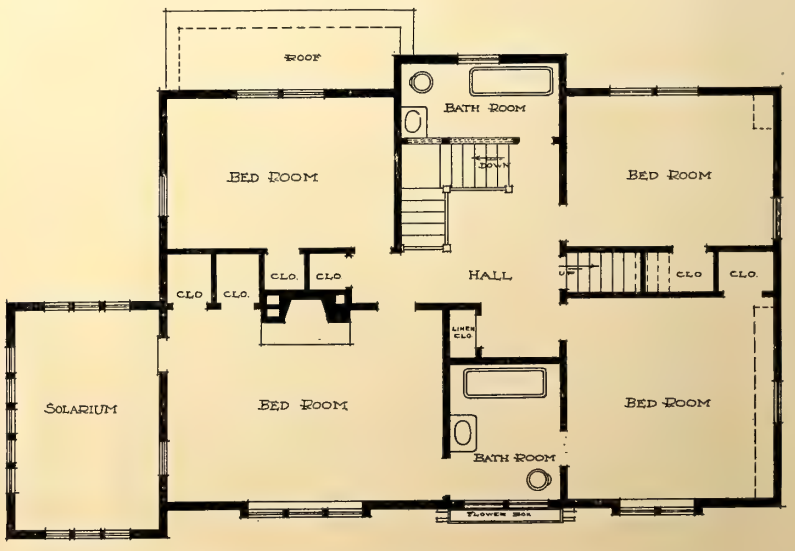
The very simple but rather unusual small house (Figs. 32 and 33) of Mr. Craw, in Brantwood, N. J., designed by Rossiter and Wright, New York, has an exterior of gray plaster in the form of clapboards and gray-green trim. The horizontal lines of the clapboards give a certain unity to the design of the front, a parallelogram irregularly divided by door and windows; and the concrete posts between (future) hedges are in harmony with the house. The irregular

28—The shingled roof of Mr. Perry Todd's house at Montclair, New Jersey, has a thatched effect

gable end, with its shaded porch, comes close up to the trees. The hall has green tinted walls and oak trim, which is repeated in the reception-room, but with old rose wall covering. The same oak appears in the panels of the living-room (Fig. 34), which are filled in with Japanese grass cloth of a golden-brown. The design of the Tiffany brick fireplace is effective. The dining-room (Fig. 35) is Delft blue in plain color up to the plate rail, five feet from the floor, with a figured wall covering above. The woodwork is yellow pine finished in ivory-white. The same yellow pine appears in the finishing of the kitchen and dependencies. On the second floor are four bedrooms and two baths, and on the third floor three rooms, in spite of the apparently modest size of the house.

A larger and more ambitious house (Figs. 37, 38 and 39), designed by Mr. Dudley Van Antwerp for Mr. Henry





29—The plans are well arranged for convenience and for equipment with the best modern appointments

30—A beamed ceiling sets off the yellow tinted walls of rough plaster of the living-room

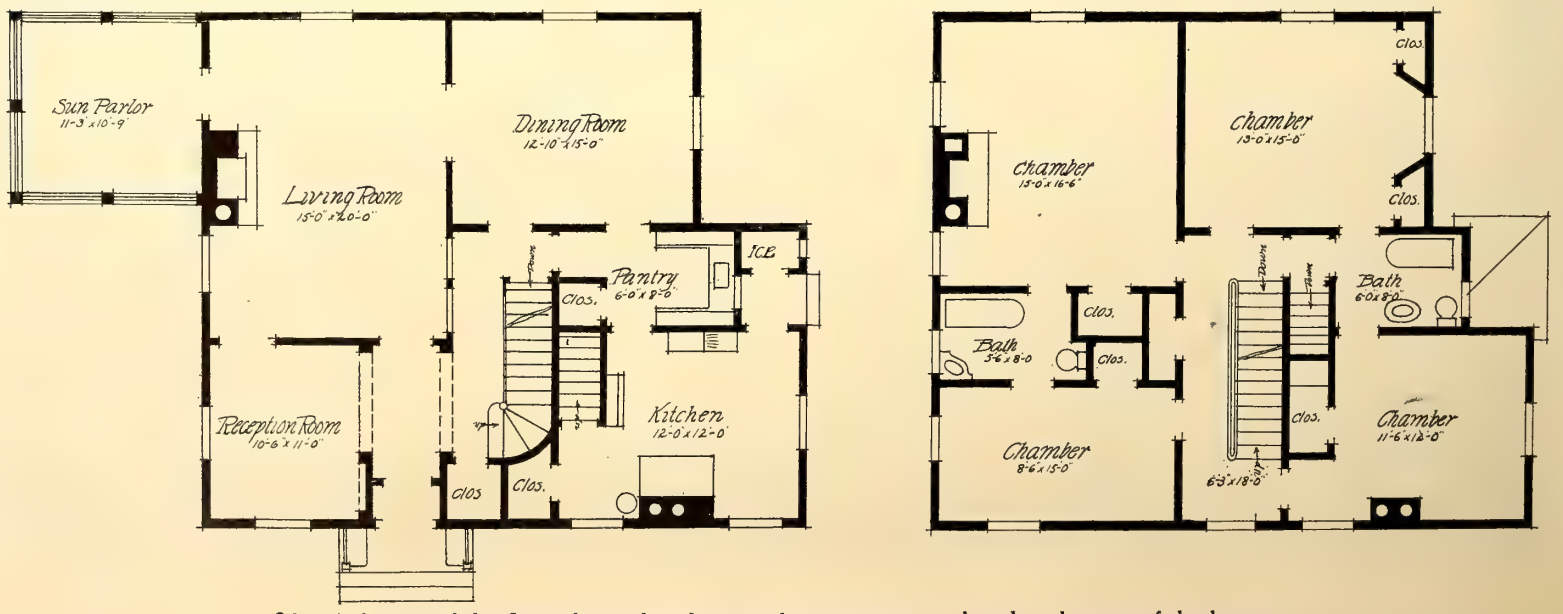
31—The dining-room is finished with Flemish oak and is ornamented with a plate rack extending around the room seven feet from the floor

32—The horizontal lines suggesting clapboards give a certain unity to the design of the house built for Mr. Craw at Brantwood, New Jersey

Fenn, of Upper Montclair, is a pleasing and restrained treatment in half-timbered work in gray-green. The shingle roof is also gray-green of delightfully varied texture, as the shingles take the color differently. The lines of the entrance are well suited to the stuccoed walls, with their broad square surfaces, and the window grouping is particularly attractive.

The living-hall (Fig. 40) is of Flemish brown, the walls covered with golden-brown Japanese grass cloth. An effective feature of the living-hall is a fireplace (Fig. 41) built of cement with a massive mantel. The fine paintings over the fireplace are the work of the owner. Off the living-hall, on the same floor, is his studio. The dining-room (Fig. 42) is in soft brown-chestnut. The second floor has four bedrooms and bath with tile floor and wainscot.

Interesting and attractive as these typical stucco and half-timber houses are, they are perhaps not such striking witnesses to the all-round usefulness of



33—A feature of the floor plan is that the main living-rooms are placed at the rear of the house

34—The living-room is paneled with oak battens forming panels which are covered with Japanese grass cloth of a golden hue

35—Delft blue and white is the color scheme of the dining-room

cement as the little house illustrated in photographs, page 165. This was literally rescued by it from destruction, since it was a ruinous old shack (Fig. 25) on ground bought for a park by the city of Lincoln, Neb., and unsalable. But the energetic State geologist, Prof. Erwin H. Barbour, was interested to try the experiment of reclaiming it by methods possible to any owner of a dilapidated structure, and did so on behalf of the Park Board. The actual work was intrusted to the head gardener of the Lincoln park system, who had had no previous experience in stucco work, in order to test the results that might be reached by any average farmer, ranchman or amateur worker in cement. Professor Barbour's description of his work is worth quoting at length, to encourage the others:

"The curved and rickety weatherboards were nailed securely to the studding regardless of breaks, cracks, knot

36—The house of Mr. Wright at Brantwood, New Jersey, is built after the same floor plan as figure 33

37—The entrance gate to the home of Mr. Henry Fenn, at Upper Montclair, New Jersey

holes, missing pieces, misfit lumber and rotten spots. Metal lath, which comes in convenient strips about eighteen inches wide by nine feet long, was nailed securely over the house. It is put on by nailing through it into the studding and then bending the nails over and pounding them down. As soon as the house was properly lathed a coat of cement plaster was troweled on with a firm hand so as to insure good keys and at the same time completely fill cracks and joints in the weatherboarding. It matters not how rough this coat is, in fact it is well to further roughen it by scratching.

"This is known as the scratch coat. The scratcher which we used was made by driving a few wire nails through a small wooden block. With this simple tool the cement was quickly and effectively scratched and roughened before it had set, thus preparing it for the succeeding coat. The formula for mixing the scratch

38—The house of Mr. Henry Fenn, Upper Montclair, is a pleasing and restrained treatment in half-timber work

coat is one measure of cement and three of sand; one to four or five would do.

"In mixing use a clean platform of boards, the barn floor, or a large box. Put the sand and cement together dry, and turn repeatedly with a shovel to thoroughly mix; make a hollow in the pile, pour in water, and continue to turn and mix with a shovel until an even mortar is made that will spread nicely under the trowel. It is a very easy and simple process, requiring no previous experience, and the amateur may feel entire confidence in the results if a reasonably good cement is used. Trowel on the second coat as soon as convenient, making it a little richer in cement than the scratch coat. Use, say, one measure of cement to two of sand. By all means avoid trying to make this last named coat "nice and smooth." Let it be rough and irregular, for the worse it is the better. The coat of cement plaster when done is about three-fourths of an inch to one inch thick, and is as hard and enduring as stone.

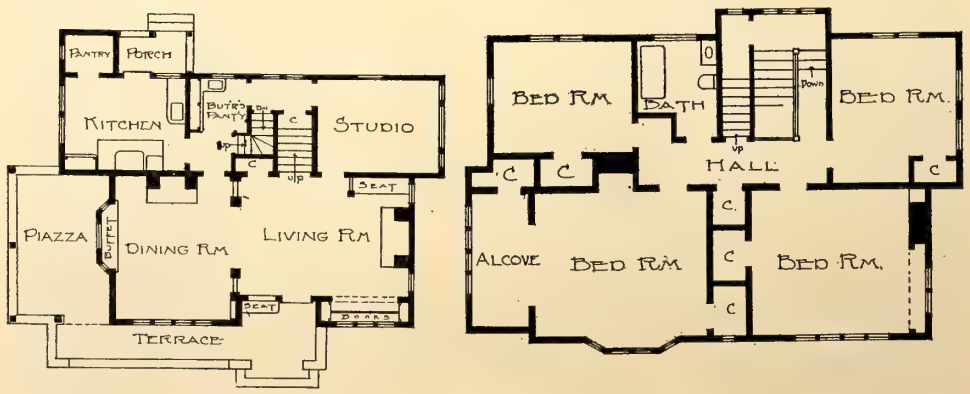
"This work was done late in the fall, so the injurious effects of the summer sun and rapid drying were escaped without the necessity of shading.

"Take notice that this abandoned building, which would not have sold for one hundred dollars, was converted into a good looking house (Fig. 26) for a sum of one hundred and seventy-three dollars, a house that could not have been built anew for one thousand five hundred dollars, as estimated by local carpenters. The house has a good cement cellar, a large porch with floor and roof of cement, three large rooms downstairs, and two upstairs. The items more in detail are as follows:

"All material for the cellar, including walls, cast extra thick, floor and steps, cost forty-six dollars.

"All material for the body of the house, including nails, wire lath, cement and sand, cost eighty-two dollars.

"All material for the porch, which extends part way around two sides of the house, including an extra heavy cement floor a foot thick, cost forty-five dollars. The total cost of materials was but one hundred and seventy-three dollars, which sum, it must be understood, does not include labor. All the work was that of "self-help," just as would be the case on a farm.



39—The first floor plan shows the studio at the rear of the house overlooking the garden

"Two or three old buildings which

40—An effective feature of the living-hall is a fireplace built of cement

desecrated the place were torn down and the old lumber used to build the framework of a decent looking laundry and shed for storing kindling, coal and similar supplies. The size of this building is twelve by twenty feet, with eight foot studding, and the cost of the shed, made by "self help," is as follows:

Wire	$9.50
Cement for stuccoing	5.25
Cement for floor	4.50
Sand	1.60
Nails	1.00

"The total cost of this shed was a trifle less than twenty-two dollars. Material left over was used for making the cement walks about the place. The total cost for walks, shed and house was under two hundred dollars.

"The beauty of cement work is that whether done by the amateur or professional, whether done right or wrong, the results are surprisingly good."

That a good neat-looking and generally weather-proof house can be literally re-created with such slight expense and labor ought to be most inspiring to the owners of decrepit structures of all kinds. Probably as the cost of the true concrete structure diminishes, houses of the type first illustrated will be so constructed, permanent and fireproof, while stucco will be the good fairy to make new again all other buildings which, though not fireproof, are too good to throw away.

These houses could indeed all be duplicated in concrete, and with especial ease if the wooden construction, better suited to the pitched roof than is concrete, were retained, as suggested on page 163; since their general forms, surfaces and window grouping, being admirably adapted to the appearance of "exterior plaster," are equally so to that of solid concrete. As to their interiors, it should be understood that a house of reinforced concrete, or cement, or clay hollow tile, may be finished inside in the traditional

41—The fine picture at the end of the living-hall and extending across the chimney breast was painted by the owner

42—Golden brown and blue is the color scheme of the dining-room

way—that is, with wooden trim and floors, brick or marble fireplaces, and papered or cloth-hung walls, of which we have given some charming examples. On the other hand, the trend toward concrete interior construction is illustrated by the admirably designed fireplace in the house of Mr. Fenn (Fig. 40), and the walls in tinted plaster in Figs. 24 and 30. The fireplaces (Figs. 24, 30 and 42) are also entirely adapted in their forms to reproduction in concrete, which forms the natural and indeed the best possible backing for decorative tile.

With the increasing knowledge of true concrete construction, and the resulting economies that are every day being effected, we may look to see one element after another in the small house appear in concrete. First, the skeleton and stairways; then the fireplaces and floors; then, perhaps, the library wing; last of all, the outside and roof.

43—The pergola forms an inviting place to rest

44—The pergola forms a good climbing place for vines

45—A glimpse of the garden as seen from the studio

CORRESPONDENCE

The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

By Alice M. Kellogg

Author of "Home Furnishing: Practical and Artistic"

THE PRACTICAL VALUE OF ACETYLENE LIGHTING

SOME specific information in regard to the new method of lighting by acetylene gas has been asked for by a "Country Reader." How is this gas made? What is the character of the light? Can ordinary fixtures now in use for common gas be utilized for acetylene gas? Is it considered a safe means of illumination? Is it also capable of being used in a cooking stove? How about heating? Give some idea of the cost of its use after the apparatus has been installed.

Acetylene gas is generated from calcium carbide (commonly called "carbide") and water. Carbide is made of lime and coke, melted together in an electric furnace. To make the gas the carbide is brought into contact with water. The acetylene flame is of great intensity, its illuminating power being fifteen times greater than that generated by coal or city gas, with clear, white and well-diffused rays. Its steady, unflickering light is claimed to be the most perfect for reading, as it prevents eye strain. It throws off very little heat, consumes a small amount of oxygen, and leaves no trace of soot or carbon.

As the piping and fixtures for acetylene are the same as those used for ordinary city gas (with the exception of a burner tip made especially for the acetylene) it is entirely practicable to utilize the ones already in use in changing to the newer method.

Since the discovery in 1862 of the intense illuminating qualities of acetylene gas there have been rapid developments and improvements both in simplicity and safety of apparatus. The greatest source of danger is in using a gas generator that is defective in principle or in its construction. For this reason the claims of certain manufacturers that they are permitted to install their apparatus inside the home without increasing insurance rates is worthy of note. At present there are nearly 200,000 country dwellings and other places in the United States that are lighted by acetylene gas, besides many Government buildings and small towns.

For cooking as well as heating the acetylene has been made available, and, in portable form, it is of help to the camper, photographer, lecturer and contractor. The average cost of using this gas is about the same as city gas and one-half as much as electricity.

FURNITURE THAT IS EASILY HANDLED

Quoting from a letter received this month from an Illinois reader, Mrs. C. N. J., "My objection to the Mission furniture is that it is so heavy to move about. As I take care of my home myself, and am not very strong, this is an important consideration to me. And yet I do not know what other style to buy that is easy to handle, tasteful in shape and not too expensive."

Nothing could meet the requirements of this correspondent better than the wicker furniture, in which one may now find not only chairs and tables, but bureaus, cabinets, toilet tables, settles and side tables. In fact, so thoroughly practicable is this furniture that any need of the home may be met by the manufacturers. From time to time this furniture has been illustrated in the pages of this magazine, and particular attention was given to illustrating some good types in the special number for May, 1908. Of course, a careless buyer might make the mistake of selecting too ornate or too clumsy a pattern, but there are simple designs always to be had. In comparison with upholstered furniture the wicker is very inexpensive, as arm chairs may be had from five dollars upward. Seat cushions may be made of cotton, felt or hair, the latter, of course, costing more than the former. If a cushion is not fastened to the back of the chair, a loose down pillow may take its place.

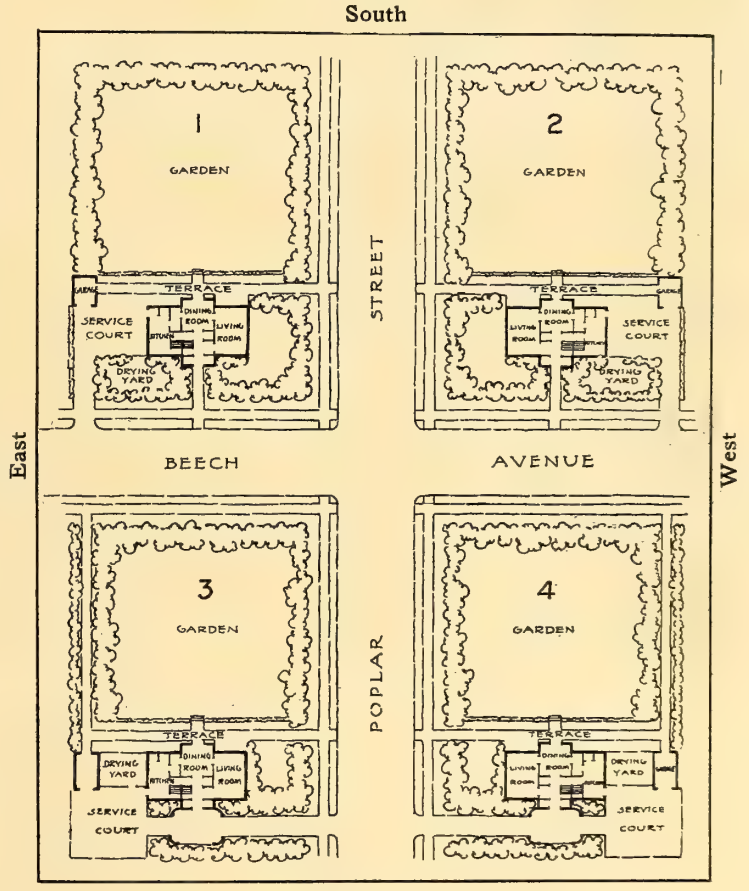
(*Continued on page x*)

Garden Work About the Home

By Charles Downing Lay

PLACING THE HOUSE ON THE LOT

"WE have a corner lot in one of the suburbs of New York, and intend to build a house there this summer. The lot is square, one hundred and twenty-five by one hundred and seventy-five feet, and it seems a simple thing to locate the house, but we are in doubt whether to have the house face the avenue, which is at the north, or the side street, which is at the east. All the houses now built there face the avenue, and we should like ours to be the same, but we do not want to have the whole rear of the place taken up with the service court, drying yard and garage, because we want to have a garden there and we want the living rooms to have a southern exposure and to face the garden. We are



Showing how the same house would be treated and arranged on four different corner lots

hoping that AMERICAN HOMES AND GARDENS can help us to a decision of this difficult question," writes E. J. R.

Your question is indeed a difficult one, and one in which you will probably have little help from your architect. Apparently architects design pleasant little houses to fit their drawing boards, for the average house seems to fit nothing else, and seems to be designed with no idea of the possibility of planning it to get the most out of the peculiar conditions of its site.

We are notoriously wasteful in this country, but there is no excuse for wasting room on a small lot, and certainly the owner will be glad to get all he can out of the space at his disposal, and he has a right to ask the architect to spend some time and thought not only

(*Continued on page x*)

PROBLEMS IN HOME FURNISHING

(*Continued from page ix*)

CUT-OUT BORDERS

From a western home, situated some distance from a large city, comes an inquiry on wall decoration: "I read in the home magazines, and also see a good many advertisements of 'cut-out borders.' Can you give me an idea of these, to me, mystic words? Are these borders a passing fad? Or are they in good taste and have they come to stay? Are they used all over the house, in every room, or should they be restricted to certain places?"—J. G. H.

The cut-out border is only one phase of the revived interest in all kinds of wallpaper border decoration. As stated in this department in March, 1908, "The purpose of the frieze, or border, is to bring a decorative note into a room while leaving the main body of the wall as a restful background." The floral border, eighteen or nine inches wide, has been in vogue for a long time, although for a few years its popularity waned. The increased

A cut-out flower border

attention that is now being paid to the artistic designing of wallpapers has revived the interest in the border and developed its sphere of usefulness. "Cut-out borders" have the pattern cut away from the background. Sometimes only the lower edges are treated in this way (see illustration), sometimes the upper edges are also trimmed and the design is dropped a few inches below the ceiling. The placing of the picture molding must be considered when using a cut-out border, and also its finish. It is an almost invariable rule to paint the picture molding the color of the ceiling, and place it at the cornice line, close to the ceiling.

At first the borders were put on the market with the edges uncut, and home talent was then employed to prepare the paper for hanging. Now, the borders are furnished by the shops all ready to be applied. There is, however, some saving in cost when this work is done by the user. Some of the prettiest of the cut-out borders are loops of ribbon with knots of flowers. A light-toned paper, pearl, straw color or shrimp pink, with a narrow ribbon border in contrasting colors, is very attractive in a sleeping room. When there are large wall spaces the border may also be pasted parallel with the upper line that is near the ceiling a few inches above the baseboard, and also carried down the sides of the walls at the angles. When this is done it is necessary to select a design that will look well in the horizontal and perpendicular positions.

In regard to the last question of this correspondent as to the proper places to use the cut-out borders, it is safe to keep them in bedrooms or the informal rooms of the home.

BAY WINDOW CURTAINS

"Will you kindly give me some special advice for the parlor bay window curtains? I want to buy something good, but have not been satisfied with my present arrangement. There is one wide window, with a narrow window at each side. I have used two pairs of Irish point curtains, one for the middle window and a half pair for each side window. Is there any other way to treat these windows? Also, please tell me if short curtains to the sill will look any better than the long ones that hang to the floor. Another item for which I would be glad to have some information is the hanging of these curtains. Shall they be put up on my old wooden poles, and held back at the sides? I feel I am behind the times when it comes to making any changes in my home furnishings."—A. I. L., Ohio.

The bay window is always a problem when it comes to the curtains, as the variations in the widths of the windows is puzzling. A few patterns in lace curtains come in two widths, forty-eight and twenty-eight inches, and these are the right kind to use, a wide pair at the center window and a narrow pair at each side window. If these two widths are not obtainable, then an all-over net or lace may be made up into curtains, cutting the width to suit the narrow windows and edging the sides and bottoms with a narrow linen lace.

The present method of hanging the lace curtains is different from the custom of a few years ago. A small brass rod, three-eighths of an inch, or, if for a long space, a half inch in diameter, is used now instead of the large wooden pole. The curtain is shirred on this rod with a heading showing above the rod an inch or an inch and a half. As the windows in a bay are so close together it is better to hang the material to the sill or a few inches below the sill. As to holding the curtains back or letting them hang straight, this is generally a personal preference that turns upon the amount of light in the room. The straight lines of a curtain hanging across the glass without looping back is often the best plan for a parlor.

RESTFUL WALL HANGINGS

"Some time ago, while we were planning our new home," writes a Maryland reader D. M. Y., "I came to your Home Furnishing Department for some ideas on finishing the woodwork. The result has been so satisfactory, as we were fortunately able to carry out your suggestions, that now we are bringing another matter to your attention. We have been six months in our house and will soon feel like papering the walls. My husband is a professional man and I am a busy woman, and we both require restful surroundings. These seem to me to be attained chiefly through the coverings of the walls, as wher-

(*Continued on page xxiv*)

GARDEN WORK ABOUT THE HOME

(*Continued from page ix*)

on doing a piece of work that is good in itself, but one that will be the best for that situation.

No matter how uninteresting the lot may be, it is not proper for *any* house; there must certainly be *one* particular house which is better adapted for that lot than any other. On a lot of irregular shape, or one which is on a side hill or on rolling ground, the difficulties are much greater, but are fully offset by the satisfaction one has in an opportunity to depart a little from the commoner forms. The more severe the restrictions, the greater the delight which the artist takes in his work, and the greater the likelihood of doing something unusually good.

The charm of English domestic architecture is due in large part to the Englishman's skill and ingenuity in fitting houses to odd shaped boundaries and irregular surfaces. The most unpromising situation is attacked boldly; every resource of planning is utilized to produce a result that is reasonable and pleasing in the highest degree.

These clever, careful Englishmen seem to leave nothing to chance!

There are certain elementary principles in planning a house which it will do no harm to repeat.

The dining-room should face east, or at least have east windows in order to have light and sunshine in the cool of the early morning.

The living-room should face south for warmth and protection in winter, and for the sake of the summer winds, which are usually from the south, and because the south is the pleasantest side of the house.

Northeast rooms are hottest in summer and southwest rooms coolest.

The front door should be on the side of the house opposite the garden.

The kitchen should be on the northeast or northwest corner, which is to leeward of the house in summer.

Next to a southern exposure for the house, that to the southeast is the best because it is the coolest side of the house in the afternoon when one is most likely to sit on the terrace or piazza.

No one cares to sit on a western piazza on a summer afternoon. It is hot and trying to the eyes, and moreover the landscape is always more beautiful when looking away from the sun.

It is a good plan to have the stable or garage rather near the kitchen wing of the house, on a small lot; then a large court will serve both instead of having a separate stable court and service court. This is a great economy of space and labor.

In the present instance I think the house should face the avenue, and be quite near it so that there is no room wasted next to the street and on the north side of the house.

A high wall in front would give sufficient privacy for that side of the house, and it might seem less eccentric to conventional neighbors to have the wall than to front the house on the side street, and have the kitchen toward the avenue.

The general arrangement of rooms in the house and of the grounds is shown on lot number two in Fig. 1.

The garden side of the house is unbroken by entrance drives or paths, and the whole space can be used to the best advantage. It will be secluded and sunny, and to have the bulk of the place on one side of the house will make the place seem twice as large as it would seem if the house were in the middle of the lot.

The arrangement of the other three corner lots is shown roughly in the diagram. Num-

(*Continued on page xii*)

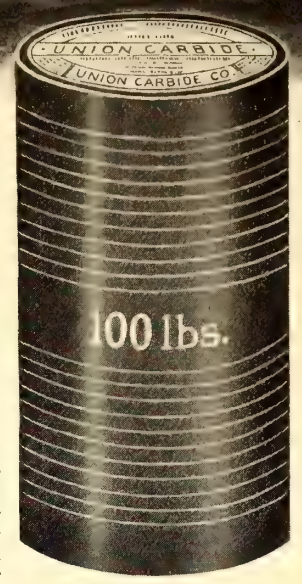
Chickering
Pianos

THE pre-eminence *of* these instruments is due principally to their exquisite tone. It is peculiar to them. ¶ No other maker, though probably all have tried, has succeeded in reproducing it. ¶ The name guarantees the Highest Quality *of* Workmanship *and* Finish.

Uprights, Chippendale design, $500 - - Quarter Grands, Style R, $600.

Chickering Pianos may be bought of any regular Chickering representative at Boston prices with added cost of freight and delivery. Our literature will be sent upon request.

Made Solely by CHICKERING & SONS
840 Tremont Street Established 1823 Boston, Mass.



Home-made Gas-Light From Crushed Stone

TWENTY years ago the oil lamp had already been driven out of the city into the country home where gas could not follow—so we thought.

In those days we would have laughed at the idea of a country home lighted with gaslight.

But like the telephone and free mail delivery gaslight has finally left the city to become a common rural convenience.

In the year 1909, the up-to-date villager or farmer not only lives in a gas-lighted house, same as his city cousin, but when he drives home on a cold, wet night he actually lights up his barn, his barnyard or porches on his house with this gaslight by simply turning an "ignition" button on a post or wall.

***

And this change seems quite like magic when you consider that this rural gaslight is home-made—made by the family itself right on the premises.

Takes fifteen minutes once a month to make all that can be used in a large house.

The magic is all in the strangely, weird, manufactured stone known commercially as "Union Carbide."

This wonderful gas-producing substance, "Union Carbide," looks and feels just like crushed granite. For country home use it is packed and shipped from warehouses located all over the United States in sheet steel cans containing 100 pounds.

Union Carbide won't burn, can't explode, and will keep in the original package for years in any climate. For this reason it is safer to handle and store about the premises than coal.

***

All that is necessary to make "Union Carbide" give up its gas is to mix it with plain water—the gas, which is then instantly generated, is genuine Acetylene.

When piped to handsome brass chandeliers and fixtures Acetylene burns with an intensely brilliant, stiff flame, that the wind can't affect.

This flame makes light so white in color that it is commonly called "artificial sunlight."

Experiments conducted by Cornell University have proven that it will grow plants the same as sunlight itself.

Physicians recommend Acetylene as a germicide and a remedy for eyestrain, and it is used as an illuminant in fifty-four hospitals in New York City alone.

Then too, Acetylene is so pure that you might blow out the light and sleep all night in a room with the burner open without any injurious effects whatever.

On account of its being burned in permanent brass fixtures attached to walls and ceilings, Acetylene is much safer than smoky, smelly oil lamps which can easily be tipped over.

For this reason the Engineers of the National Board of Insurance Underwriters called Acetylene safer than any illuminant it commonly displaces.

In addition to all these advantages, Acetylene light is inexpensive.

An Acetylene light of 24-candle power costs only about 3¾ cents for ten hours' lighting, while for the same number of hours regular oil lamps of equal volume cost about 6 cents in kerosene, chimneys and wicks on the average.

***

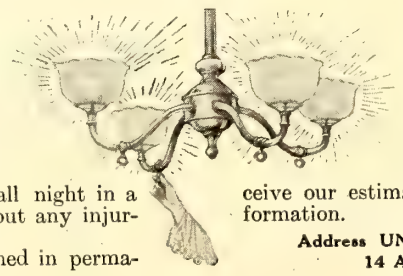
Consider this carefully and you will hardly wonder at the fact that there are today no less than 176,000 town and country homes lighted with home-made Acetylene, made from "Union Carbide."

Once a month some member of the family must dump a few pounds of Union Carbide in a small tank-like machine which usually sets in one corner of the basement.

This little tank-like machine is automatic—it does all the work—it makes no gas until the burners are lighted and stops making gas when the burners are shut off.

The lights, located in every room in your house, on your porches, in your horse and cow barns, or barnyards and chicken yards if you like, will all be ready to turn on with a twist of the wrist or a touch of the button at any time of the day or night.

No city home can be as brilliantly or as beautifully illuminated as any one of these 176,000 homes now using Acetylene.



Won't you let us tell you how little it will cost to make this time-saving, money-saving, beautifying light at your own home?

Write us today how large your house and how many rooms you have, and receive our estimate and books giving full information.

Address UNION CARBIDE SALES CO.
14 Adams St., Chicago, Ill.

YOU can make the Brilliant **Acetylene Gas** Easily! Safely! Cheaply!

WITH THE

Sunlight "Omega" Generator

Only Automatic Generator with the modern **INDIRECT** feed operated by its own power!

INSURES ABSOLUTE SAFETY!

Easiest to understand---easiest to handle! Nothing to get out of order! Brighten up your home!

Costs no more than the other kind!

Our Illustrated Book Free. Tells all about up-to-date lighting of country home. Get it! Read it!

THE SUNLIGHT GAS MACHINE CO.
47 Warren Street, New York

bers one and three, it will be observed, are exactly like numbers two and four, but reversed. Oftentimes an architect's plan will fit the lot and exposure better if it is turned in this way. It is a simple thing to do and only necessitates retracing the drawing when laid face down.

Lot number three is like number one, but in this case the house has been moved to the north, or back of the lot, and to save room the carriage entrance is on the side street. We like this arrangement better than that of number two.

In all these diagrams it will be noticed that the service court, kitchen and garage have been put in the least interesting and useful corner of the lot, and that the garage will to some extent screen one from neighbors' back yards and kitchen doors.

It will be readily seen that if the avenue were to run north and south instead of east and west, that the arrangement would be more difficult and quite different, and that another type of house would be required in order to get the most out of the lot.

PLANTING A SUBURBAN LOT

E. J. S. asks what trees and shrubs to use in planting a suburban lot which he describes vaguely.

Without an accurate plan of the house and grounds as they exist, or good photographs, it is impossible to give any general advice that will be of much use. It is also difficult to plan such things without some knowledge of the owner's tastes.

The best thing for E. J. S. to do is to go through a lot of nursery catalogues and make a list of the trees and shrubs he thinks he would like.

It would be well to avoid all variegated, yellow-leaved and red-leaved shrubs unless one wants a very gaudy place, in which case one could do startling things with such brilliant material. For everyday life there is enough variety in the tones of green foliage to satisfy most of us. At first the list might be confined to hardy native plants, of which there is a wonderful variety. Many of these natives are little known and few have attained the popularity of forsythia, or Japanese barberry. It would be a rare delight to see a place planted only with native trees and shrubs.

The nurserymen are only concerned in growing and selling plants; not in inducing one to make an intelligent choice, but a profitable one. Just now the profits are greater in selling ordinary stock, but if the demand for the best class of natives grows they will be forced to supply it.

The list might contain, among others, the following striking, but neglected, shrubs and trees:

Cladrastis tinctoria, yellow wood, our most elegant spreading tree.

Amelanchier, shad bush, a small, flowering tree, second only to the dogwood in beauty, which bears edible fruit.

Halesia tetraptera, the silver bell tree, well named and as beautiful as its name.

Stuartia pentagyna, which bears a camellia-like flower in August.

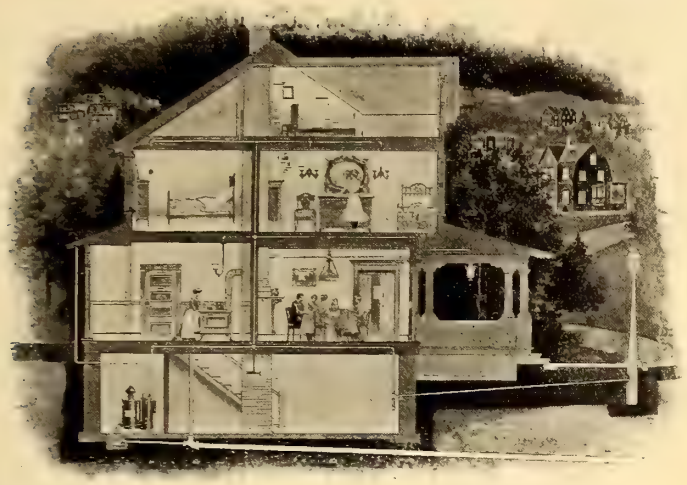
Andromeda arborea, the lily of the valley tree, which blooms in July and turns beautifully in October.

Pyrus coronaria, the fragrant crab, whose blossoms are perhaps more delicious than the rose or violet.

Magnolias in great variety. These have the largest leaves and the largest blossoms of any trees, and are altogether satisfactory and striking. The partially evergreen, *M. glauca,* should not be neglected.

Chionanthus virginica, white fringe, is well known but no less beautiful on that account.

Let Us Provide Modern Lighting for Your Home



You will have fixtures to suit any decorative effect desired; lower lighting cost than sufficient light by lamps; absolute independence of monopoly lighting conditions and enjoy light of the best.

DID you ever hear of the Colt Standard Generator? It consists mainly of two tanks, and so simple that a large residence including outbuildings and grounds may be brilliantly lighted by fifteen minutes' attention once a month or less—by a bright boy or any "man of chores."

It makes (generates) Acetylene Gas—modern acetylene—cool, clean, dry and pure; delivers it to the piping, under a pressure that wouldn't break a pasteboard box, and the burners pass per hour but one tenth the amount of gas (if carelessly left open) as would a city gas burner of equal size, viz., twenty-five candle power, and the gas is non-poisonous. Thus the gas is much safer than city gas, with which all are familiar, and which insurance reports show to be much safer than electricity.

Better Light and Perfect Service

Because the Colt Generator makes cool, pure gas the light is actually—not theoretically—the nearest approach to daylight of any artificial light known. It is so near to daylight that colors in pictures, furnishings and decorations show their true colors—a revelation in enjoyment of the home at night.

And the light is wholesome and healthful—odorless, clean and cool. There are no mantels, chimneys, etc., as with ordinary gas—to detract from the appearance of fixtures or cause annoyance and expense. The gas can be lighted by push button—thus providing all of electricity's lazy convenience but without electricity's eye strain, for this light is natural—color balanced; a soft white light—like sunlight. Yet it costs less than oil.

Fixtures to Suit all Tastes and Pocketbooks

Usually regular gas fixtures, such as are used with city gas, are installed. But there are other kinds available at reasonable cost; fixtures that perfectly simulate candles, lamps, lanterns and electroliers.

The Method is Simple

Excepting for the advantages as pointed out, the method is the same as for city gas, differing only that you are independent, get better light (our gas is also practical for cooking) and in difference in cost between independence and public service charges, the generator is a desirable investment—not an expense.

Our Colt Standard Generator

It is used in thousands of residences throughout the United States and lights many American palaces. Yet it is so low in cost as to be within the reach of every one. Seventy-one United States Government Lighthouses use them, which is conclusive proof of their efficiency.

The **Colt Standard Generator** has:

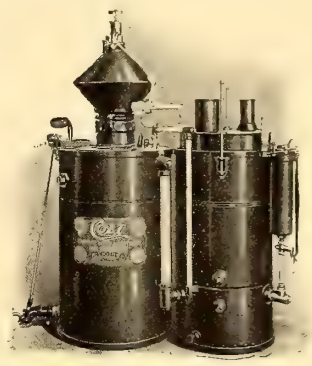
—The fundamental principal of gravity—hence simplicity and positive operation as to reliability and economical production of gas.

—**Colt Float Feed Cut-off,** which for safety is like the water injector that prevents low water in a steam boiler.

—**Colt Floating Trap,** which washes, cools and drys the gas, making it perfect.

These features are all gravity in principle—as certain of operation as the falling of a stone thrown into the air.

Other features—all a part of the most conscientious manufacture—provide against forgetfulness and carelessness and make it strong, durable and a good investment.



General Information

It takes an illustrated booklet to tell our story completely. Each page is alive with interest. We will gladly send it free.

As we shall not remind you to write us by repeating this advertisement, will you not write us to-day?

You want good light, and we believe you will appreciate the service we offer. We have distributors all over the United States and prices are uniform—but address home office.

J. B. COLT COMPANY, 23 Barclay Street, NEW YORK

"WILLOWCRAFT"

¶If you desire the most stylish furniture that can be obtained at a reasonable cost, use our

French Willow Furniture

Lightweight, durable, artistic and cleanly.

Send for Catalogue and Prices

THE WILLOWCRAFT SHOPS
BOX A NORTH CAMBRIDGE, MASS.

SHETLAND PONIES

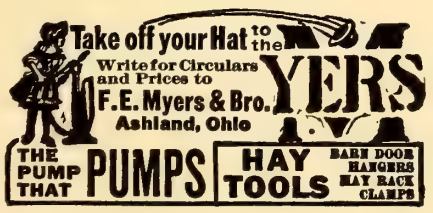
An unceasing source of pleasure and robust health for children; safe; inexpensive to keep; many champions; stallions and mares for breeding; complete outfits; our beautifully illustrated free catalog tells all about them.

BELLE MEADE FARM
Dept. W. BEDFORD, MASS.

ASP. ROOTS & CAL. PRIVET

French Argenteuil Asparagus Roots, grown from imported seed, highly cultivated, selected for country homes. **Finest flavored and largest Asparagus known.** Plant now. $3 per 100, $5 for 200, $10 for 500. Also California Privet, easily trimmed, for hedges, screening unsightly objects. Strong plants for immediate effect, $3.50 per 100, $6.50 for 200, $15 for 500. Planting directions for either with order.

S. L. de Fabry, Grower, Little Silver, N. J.



The latest improvements for homes, the concrete

"BUNGALITH"

DURABLE, ECONOMICAL, CONVENIENT

Address THOS. HALL, 257 39th Street, Brooklyn, N. Y.

Peonies and Irises True to Name!

Buy of a specialist, who grows and knows the stock he sells. I have been specializing in hardy flowers for over eight years, but only a few months ago issued my first catalogue. My offerings comprise over 250,000 Iris and Peonies in about 1,000 varieties. SEND FOR MY CATALOGUE of Peonies, Irises, Phloxes and Hardy Plant Specialties. Pronounced by experts the most complete in America. Contains information of great value to all who love hardy flowers. Free on application.

BERTRAND H. FARR, WYOMISSING NURSERIES
809E Penn Street, Reading, Pa.

Place a sundial in your garden or on your lawn and it will return an hundred fold in quiet enjoyment.

WRITE US FOR FREE BOOKLET of

Sundial Information

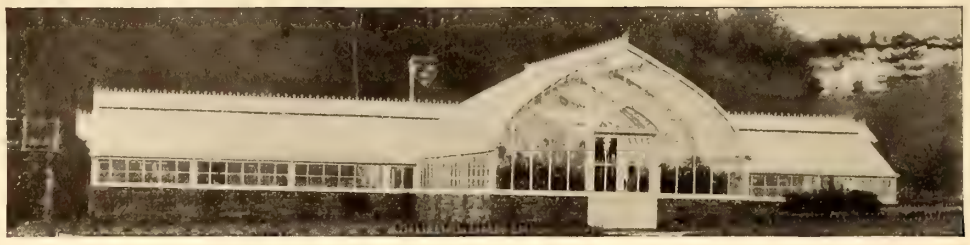
CHAS. G. BLAKE & CO.
778 Woman's Temple, Chicago, Ill.

PRICE, $8.00

CHINESE WICKER BASKET CHAIRS

Imported direct from *Hong Kong China.* Weather finished, strongly made, very artistic, just the chair for porch or den. *What you have always wanted but never knew where to obtain.* Sent direct upon receipt of price. Satisfaction guaranteed or money refunded. Reference German-American Savings Bank, Los Angeles.

HOMER G. HOWRY
Importer of Chinese Wicker Furniture
Broadway Central Bldg., Los Angeles, Cal.



A SPLENDID GREENHOUSE COMBINATION

The curved roof house in the center is for palms; those on either side for roses, carnations and a compartment devoted to general plants such as stocks, sweet peas, snapdragons and the like.

This group of houses is pleasing in effect and right down practical in every way—and that is what you want first of all. However, our illustrated matter may contain houses that you would prefer. We will gladly send it.

HITCHINGS & COMPANY

1170 BROADWAY, NEW YORK CITY

Why stir up the Dust Demon to Frenzy like this?

WHY THIS $25 VACUUM CLEANER
DOES THE WORK OF A LARGE POWER PLANT

Many persons think of Vacuum Cleaning only in connection with a big gas engine hauled around on a wagon or a big stationary power plant costing $500, $1,000 and upwards.

Therefore they are astonished when told that the IDEAL VACUUM CLEANER, which weighs only 20 pounds and is operated either by hand or a little electric motor, **is the perfection of the Vacuum Cleaning principle.**

For this astonishment there is no need. Here are the facts:

Every Vacuum Cleaning system consists of four essential parts: (1) Motor Force; (2) Suction Pump; (3) Filtering Tank or Separator; (4) Hoze with nozzle.

The Motor Force operates the Pump. The pump sucks the air from the Tank or Separator so as to create in it a Vacuum. To fill this Vacuum air whirls in through Nozzle and Hose, carrying with it dirt, dust, grit, germs and all other foreign matter.

Why heretofore has there been need of a Motor Force of great power? Simply because **the Pump and Separator have been far from the spot where the actual cleaning is done**—out in the street or down in the cellar—so that the Force has had to operate through pipes and tubing over long distances and around sharp angles.

Only that and nothing more.

The Ideal Vacuum Cleaner

OPERATED BY HAND — (FULLY PROTECTED BY PATENTS) "IT EATS UP THE DIRT" — OR ELECTRIC MOTOR

—right on the spot. In this strong, compact, portable machine, all the parts of the most efficient Vacuum Cleaning system are for the first time **scientifically and economically concentrated.**

And that is why the force you put in it by hand, or the force from a little motor connected with any electric light fixture, does **the same actual cleaning work** that is done by the big engine—**and does it better and with more convenience.**

All the power of the Ideal Vacuum Cleaner is right where it is wanted. No *surplus* power has to be developed to take it there, and all its power being *directly* applied to cleaning purposes, none is wasted. Order at once so as to have your Ideal before house-cleaning time.

You can't keep your carpets, rugs, curtains, upholstery, wall decorations, etc., clean with broom and brush, **and least of all with carpet-sweeper.** Vacuum Cleaning is the only **right means,** and with the IDEAL VACUUM CLEANER at your service, there is no longer any excuse for your being without its benefits.

Everybody can afford the IDEAL. No skill needed to operate it. Compared with sweeping, it is no work at all. Every machine guaranteed.

Your Protection

That you may safely place your confidence in it and order a machine now, is shown by the large book of enthusiastic testimonials sent us by many of the nearly 12,500 purchasers of the machines, sold in less than nine months. This proves its merits and is your protection.

Let us tell you how you can get one of these wonderful machines promptly. Also send for our Free Illustrated Booklet. It tells an interesting story of a remarkable saving in money, time, labor, health and strength. Send for it to-day.

American Vacuum Cleaner Co.
225 5th Ave., New York City

Pyrus arbutifolia is a charming shrub at any season.

Hypericum aureum, with golden flowers in August, relieves a dull season with its brilliant blossoms.

Crataegus, a small tree, which is now said to be found in more than fifty-seven varieties, is quite perfect from an artistic standpoint.

Among evergreens there are, of course, the rhododendron and laurel, *Lencothoe* and *Andromeda,* all expensive, but long-lived, and the most gratifying and satisfactory of all plants.

Among the conifers we might include the red cedar, juniper, ground yew, pines and spruces, all of which are uncommon compared with the Norway spruce.

Oaks, unfortunately, are hard to transplant. There are many besides the pin and scarlet oaks, and if small sizes are bought the proportion which will live is greater and the cost less.

In planting these things put them in masses on the borders of the lawn or to hide the foundations of the house. Do not dot the lawn with shrubs until it looks like a growing set of dominoes.

A single magnolia, for instance, might be on the lawn a little in front of the shrubbery, so that it will get light on all sides, and grow symmetrically. That will be very nice, but half a dozen dotted about would be horrid. The popular way is to have groups of three little evergreens disposed at various intervals and at unimportant points on the lawns, but such commonplace grouping is the expression of a rudimentary artistic sense.

I think it is a mistake to plant shrubs and herbaceous flowers together. It never looks quite right, and the shrubs are bound to grow larger than one expects and shade the flowers. It is better to have a flower garden or an herbaceous border separate from the shrubbery.

A ROSE GARDEN

"I have a great many rose bushes which are now planted in a bed in the lawn and at one side of the house. They are fine varieties, but I must say they look pretty ragged most of the season. What can I do with them to make the place look better?"

I should certainly advise you to have a special rose garden, where all the bushes can be segregated and enjoyed by themselves.

Rose bushes are not an ornament to the lawn. Their foliage is poor and their growth straggling and untidy. Even when in full bloom they do not look well in the landscape, and all their beauty is lost when seen from any distance.

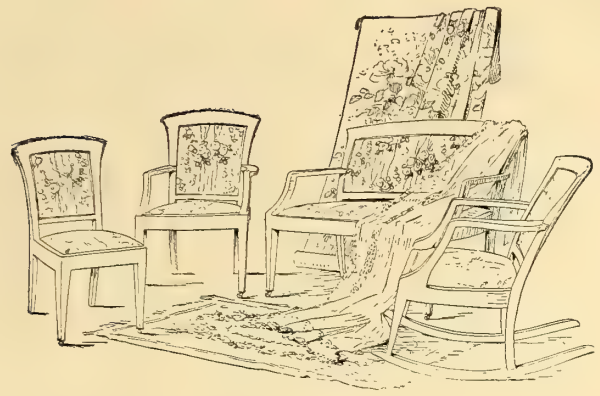
The flowers themselves are their only beauty, and these, if they are to be enjoyed, must be picked and worn or used in the house. If left to decorate the bushes they open too wide. A rose wide open is an ugly thing and should never be seen in that condition.

Roses in a special garden are more easily cared for, and at the best they are the most difficult of all flowers to grow in perfection. They must be cultivated, manured, sprayed, and watered constantly. Every day one must look each bush over carefully and pick off worms and beetles. For people who enjoy growing roses this work is not hard, but it is nice to have all the bushes collected in a secluded spot, where one may work at ease.

The rose garden should be small, intimate, and with a simplicity befitting the glory of the flower. Comfortable paths, but not too wide, should be provided, and many seats. It should be a garden without long vistas, so that one never sees the bushes in mass, but always near at hand and in minute detail.

A jar of water constantly overflowing, in which the long stems may be plunged for a time, a table on which they may be arranged

FLINT'S FINE FURNITURE



Summer Furnishings for Town or Country

This illustration represents one of our many inexpensive Enameled Suites for summer use, with cretonne and wall papers to match, a simple net curtain and a cool summer rug.

An unusual collection of Reed and Rattan Furniture, which may be finished in any desired color of stain or enamel, making it impervious to climatic changes.

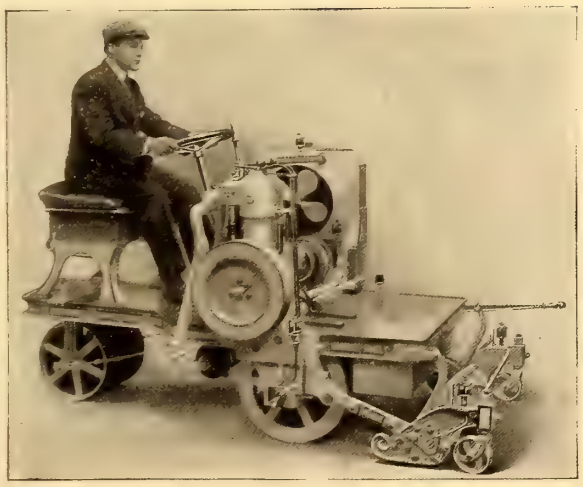
We are prepared to submit sketches and estimates that require specific and technical knowledge for Interior Decorations or Furnishings, for execution in either town or country.

GEO. C. FLINT CO.

43-47 WEST 23rd ST. 24-28 WEST 24th ST.

Coldwell Lawn Mowers

Hand, Horse and Motor Power



are used by the New York City Park Department, the Capitol at Washington, and by many leading golf and country clubs and large estates of America

EXCLUSIVELY

Send for Catalogue

Coldwell Lawn Mower Company

20 Coldwell Street NEWBURGH, N. Y.

BOBBINK & ATKINS'

World's Choicest Nursery Products

It is advisable to order now to get your choice of our world's choicest nursery products. Never before have we had a selection as handsome as we offer for planting this season. Intending purchasers will do well to visit our Nurseries to inspect our products. If you cannot, we shall be pleased to give prices on your list of wants for Spring planting.

TRAINED AND DWARF FRUIT TREES
We have a complete assortment of these popular and profitable trees.

PINES
We grow many thousands in all the most useful and striking kinds. No grounds are complete without a proper number of them, as they are healthful and add attractiveness to the landscape.

EVERGREENS AND CONIFERS
Many acres of our Nursery are planted with the most attractive specimens ever produced in this country. Our collection has been admired by visitors from all parts of the world.

ROSES
We have many thousands of two year old plants ready for shipment, consisting of all the most suitable for the American climate.

OLD FASHIONED FLOWERS
For old fashioned gardens, beds and borders. Many acres of our Nursery are planted with the most complete collection in this country. Thousands of people visit our Nursery annually to see them when in bloom.

FRUITS
We can supply fruit trees to make a complete fruit garden. In addition, we have a fine selection of all kinds of small fruits, strawberries, etc.

RHODODENDRONS
Are among our specialties. Everybody intending to plant should certainly see our stock. We can give prices on large or small quantities in all the hardiest and most attractive varieties.

BOXWOOD
Our stock is probably unsurpassed, as we have thousands in all sizes, suitable for boxwood gardens.

TREES AND FLOWERING SHRUBS
Our trees and shrubs are hardy, vigorous and free from disease.

BAY TREES
The largest collection in this country in all sizes can now be seen in our storehouses.

VINES AND CLIMBERS
We have large quantities for every style of covering.

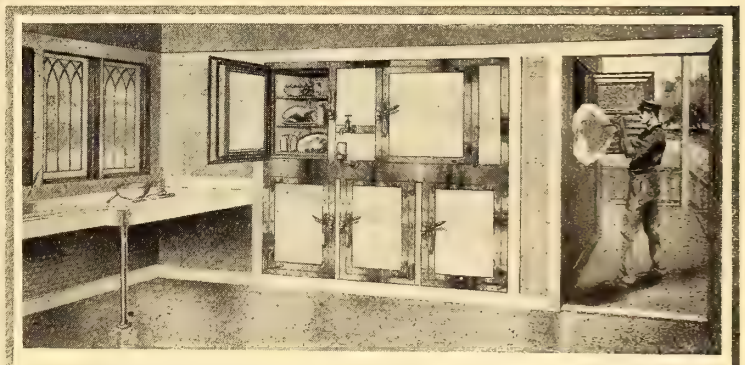
HEDGE PLANTS
We grow thousands for any kind of hedge desired.

TUBS
We make them in all sizes and shapes for plants and trees.

Our nursery products will give permanent satisfaction to purchasers, because they possess the standard of quality created by the highest grade of cultivation. Our **Illustrated General Catalog No. 90** will be mailed to prospective purchasers.

VISIT OUR NURSERIES

Nurserymen and Florists **Rutherford, N. J.**



A Special Refrigerator for Your Special Needs

It is now the custom to plan for and build the refrigerator to fit the space most convenient to pantries and kitchen—to provide an extra door for the ice chamber so that it can be iced from an outside porch.

McCRAY REFRIGERATORS

(Keep things fresh)

because the air in them is **purified** by constantly recurring contact with the ice, caused by the **"McCray System."** This also **dries** the air so that even matches or salt can be kept perfectly dry in this refrigerator.

Your choice of sanitary linings: **Opal-glass,** (looks like white china—½ inch thick) **porcelain-tile, white enameled wood** or **odorless white wood.** No zinc is ever used, as zinc forms dangerous oxides that poison milk and other food. Can be arranged for icing from an outside porch if desired.

Cut Down Your Ice Bills

McCray Refrigerators use less ice than other refrigerators, because McCray walls are the thickest and best "heat and cold proof" walls made.

McCray Refrigerators of all sizes and styles are ready for immediate shipment. Built-to-order refrigerators for any purpose can be shippid three weeks after order is received. Every McCray is guaranteed to give lasting satisfaction. Upon request we will send you one of our illustrated books which explains why McCray Refrigerators are better than other refrigerators and **different** from ordinary ice boxes. Write a postal for catalog while you think of it.

No. A. H.—Built-to-order for Residences.
No. 66.—For Grocery Stores
No. 58.—For Meat Markets.
No. 85.—Regular size for Residences.
No. 47.—For Hotels, Clubs, Institutions, etc.
No. 71.—For Florists.

McCray Refrigerator Co., 887 Mill Street, Kendallville, Ind.

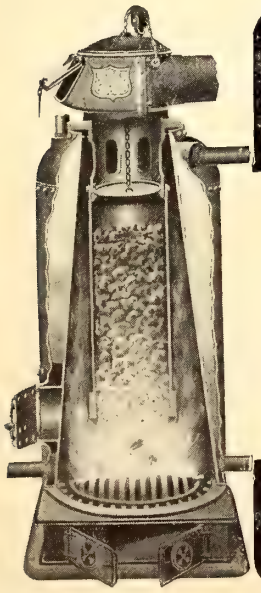
The Price of Goodness

The goodness of Uneeda Biscuit is not a matter of cost to you. It is assured by the careful selection of the best materials for Uneeda Biscuit; by the skill of experts who bake nothing but Uneeda Biscuit; by the perfect cleanliness and appliances of great bakeries built expressly to bake Uneeda Biscuit; and, finally, by the perfect protection of a package that excludes all dust and moisture.

All this has resulted in a quality out of all proportion to the price.

Uneeda Biscuit 5¢

NATIONAL BISCUIT COMPANY



Heat & Hot Water Any Time

Without a Night Fireman

made possible by a WILKS WATER HEATER in your greenhouse, barns, garage, brooders or anywhere that hot water and heat are desired. The WILKS IMPROVED COAL MAGAZINE is the only one that *feeds* itself and *regulates* itself, keeping the fire 10 consecutive hours, thus doing away with need of night firing and making

WILKS Water Heaters

as easily cared for as a kitchen range. Any desired degree of heat or temperature can be maintained. We *guarantee* these heaters to work right and give satisfaction if installed according to our plain directions. Anyone can install. WILKS HEATERS are strongly made of high grade steel and will not crack, as they have no sections—no bolts to loosen. Tested to 100 lbs. pressure. Successfully used for 50 years.

Write for Book giving size, price list, description, etc. In your letter state what you want a heater for and we will advise you what heater is best for your particular requirements.

S. WILKS MFG. CO., 3514 Shields Avenue, CHICAGO

It Don't Pay to Feed Hens That Don't Lay

We have for sale 100 pure bred yearling White Leghorn hens—**all laying to-day**—$2.00 each. Also 5 cockerels $5.00 each, or we will divide the lot to suit—Settings of 15 eggs, $2.00.

BELLE HILL WHITE LEGHORN RANGE, Elkton, Md.

for the house, complete the furnishings of the garden, unless one can have a sun-dial on a beautifully carved pedestal, or some small faun in bronze to smile and sympathize with the things that happen not only among the roses, but, perhaps, also sub rosa.

In such a garden one may pass many hours of delightful occupation and many hours of thoughtful worship of the queen of flowers.

The rose garden should be protected from high winds, and it will be all the better if it gets sunshine for only eight hours in the middle of the day. Before eight or nine the sun perhaps will not reach it, and then is the time for work and for picking the flowers while still dew covered and just beginning to open. The colors of the rose are more brilliant in the morning light or after four in the afternoon, when the long shadows from the west come creeping over them; toward night their fragrance seems to float in the air, more delicate and more entrancing.

After the first prodigality of bloom in June, there comes a pause when there are few flowers and then one is quite willing to have the rose bushes out of sight and to forget all about them, except the necessity for cultivation and watching.

There is a quick recovery and for the remainder of the summer there should be plenty to gather every day.

THE HOTBED

By Ida D. Bennett

I HAVE always advocated the construction of the cheapest and most temporary of hotbeds rather than no hotbed at all, but where one is living in their own home and the bed will be apt to prove permanent, a substantial construction is always to be preferred, and this can best be secured by the use of concrete. I could give reliable data as to the amount of material and expense of constructing a hotbed of a given size, if there was any uniformity in the charges of masons and the cost of material even in the same place. Where one can do their own mason work, or at least oversee it, concrete construction is the cheapest and most satisfactory form of permanent work for outbuildings, but high priced, and dishonest masons may easily make it the most expensive.

In building permanent structures it is well to build them on a generous scale, as it is better to have a little unused room than to be cramped for space, and the advantage of having room, not only for the starting of one's flower and garden seeds, but also of bulbs and cuttings, is beyond any trifling matter of expense, for a few feet more or less will not add materially to the expense.

Even more important than the matter of size of the beds is their location, for upon this will depend their effectiveness. They should be as near the house as possible for convenience in caring for, and should be, if possible, on a rise of ground or at least in a well-drained position and facing the south, with a building, wall or other windbreak at the north; protection from the full force of the west wind also has a value, for the hotbed will be in commission at a time when the west winds are much in evidence.

It is best in constructing the beds, whatever the material, that the building shall be from the bottom of the pit up, and the pit should be about four feet deep. Very satisfactory results often follow the making of beds whose frames rest upon the surface of the ground, but such an arrangement always presents a serious element of risk, especially where the premises are infested with moles, gophers and field mice, which enter unprotected beds much to their harm. It is seldom that trouble of

MENNEN'S
BORATED TALCUM TOILET POWDER

"Baby's Best Friend"

and Mamma's greatest comfort. **Mennen's** relieves and prevents **Chapped Hands and Chafing.**

For your protection the **genuine** is put up in **non-refillable** boxes—the **"Box that Lox,"** with **Mennen's** face on top. Sold everywhere or by mail 25 cents—*Sample free.*

Try Mennen's Violet (Borated) Talcum Toilet Powder—It has the scent of Fresh-cut Parma Violets. *Sample free.*

GERHARD MENNEN CO., Newark, N. J.

Mennen's Borated Skin Soap (blue wrapper). *No Samples,* Specially prepared for the nursery. Sold only at stores.

Mennen's Sen Yang Toilet Powder. Oriental Odor.

"You do the designing—

Thread & Thrum Rugs

we'll make the rug."

Thread and Thrum RUGS

Different from all other rugs, made in colorings to match your decorations. Special styles to go with Mission or Fumed Oak Furniture. Wool weft, seamless, heavy, reversible and durable. All sizes up to 12 feet wide and any length. Sold by best shops in principal cities. If your dealer does not keep them, write Arnold, Constable & Co., New York, for Color Line and Price List.

THREAD AND THRUM WORKSHOP, Auburn, N. Y.

PALLISER'S UP-TO-DATE HOUSE PLANS

is just off the presses

The object of these plans is to combine present-day elegance, convenience and comfort in a house of moderate cost.

They afford the home builder an opportunity to consider several plans before deciding on the one exactly suited to his wants.

They also eliminate the usual expensive "extras" in building. **Palliser's Up-to-Date House Plans** is a well-bound book of 160 large octavo pages containing complete plans and working directions for

150 Houses Costing from $500 to $18,000

Published in limited edition and priced at less than the cost of one hour of an architect's time.

Paper Binding $1.00. Cloth $1.50, postpaid

J. S. OGILVIE PUB. CO., 41 Rose St., New York

FREE REX FAMOUS COMPLEXION POWDER

THE KING OF ALL BEAUTIFYING POWDERS

It is absorbent and non-irritating, and may be used where other powders are impossible. It will enhance the beauty of the most perfect complexion and render less apparent the defects of the poorest. It is endorsed by the leading professional and society people, and we guarantee every package to give perfect satisfaction. To further introduce this wonderful powder we make this special offer to you. Send us the names and addresses of ten ladies and 10c. in money or stamps to cover charges, and we will send you prepaid a sample package of **Rex Complexion Powder**, a sample jar of **Rex Scientific Beauty Cream**, and our handsome illustrated **Beauty Book.** This handsome book is 32 pages and cover, and complete in detail; telling you how to preserve your beauty and create new charms. **Rex Scientific Beauty Cream** is without a peer, we positively guarantee that it contains nothing that will produce or encourage the growth of hair or down on the face. It has more body and is a better working cream than any other cream manufactured, and will not turn rancid. By dealing with us you are guaranteed satisfaction; we will promptly return purchase price if any of our articles are not perfectly satisfactory to the user. Address

REX BEAUTY SPECIALISTS, Dept. C
290 E. 43d St., Chicago, Ill.

L. WOLFF MANUFACTURING CO. TRADE MARK CHICAGO.

FIFTY FOUR YEARS OF QUALITY
WOLFF'S PLUMBING GOODS

"Guaranteed"

Architects are cautioned that there are many guarantee labels being used on porcelain enameled iron plumbing fixtures, and that in accepting a ***guaranteed*** tub, it will be the part of caution to identify the firm issuing the guarantee label as to financial responsibility and record of having made good, in a broad way, all that a guarantee label both states and implies.

The WOLFF GUARANTEE is fifty-three years old, and during that time has made a reputation for itself unique in the relation of a manufacturer to his product.

The cost of tearing out and replacing imperfect plumbing fixtures is so great that a guarantee label must have a broader meaning on plumbing equipment than on any other branch of building equipment. The guarantee label that is not backed by reputation and undoubted financial responsibility is indeed an empty statement.

L. WOLFF MANUFACTURING CO.

Manufacturers of

PLUMBING GOODS EXCLUSIVELY

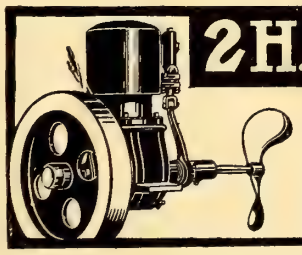
The only Complete Line made by any one firm

DENVER CHICAGO TRENTON

Showrooms: 91 Dearborn Street

BRANCH OFFICES:

615 Northwestern Building, Minneapolis, Minn.
Builders Exchange, Cleveland, Ohio.
1209 Scarrett Building, Kansas City, Mo.
Monadnock Building, San Francisco, Cal.
77 Richmond Avenue, Buffalo, N. Y.
1108-1122 Nicholas Street, Omaha, Neb.
327-328 Bond Building, Washington, D. C.



2H.P. Detroit Engine $29.50

3-5-7-10-12 14 and 40 H. P. at proportionate prices.

Starts without cranking; no cams, valves, springs or sprockets. Only three moving parts. Uses alcohol, gasoline, naphtha, distillate, kerosene, coal oil, etc. All bearings babbitted. Cylinders and pistons ground. Crank shaft forged steel. For your Row Boat, Sail Boat, Launch. 10,000 in use, All sizes ready to ship. Send for testimonials and **free catalog.**

DETROIT ENGINE WORKS, 1206 Jefferson Ave., Detroit, Mich.

Build Beautiful Houses

It is really cheaper to be beautiful than ugly. Your reputation for taste depends mostly upon the outside of your house. Most people never see the inside. The soft, rich, velvety tones of

Cabot's Shingle Stains

make beautiful houses more beautiful, commonplace houses attractive, and redeem ugly houses. They are also cheap, easy to apply, and guaranteed fast colors; and they are made of Creosote, "the best wood-preservative known."

Agents at all Central Points

SAMUEL CABOT, Inc., Sole Manufacturers
131 Milk Street, Boston, Mass.

W. E. Jackson, Architect, Philadelphia

Samples on wood, and color-chart sent on request

"Quilt"—the warmest sheathing paper

The Reason Why

"Old English" Floor Wax produces so beautifully that rich subdued lustre which makes the floors become a pride of the home is simply because it is exceptional in its "quality."

Floor waxes are made essentially from two ingredients—a hard, expensive wax and a soft, cheap wax. It is easy to put in too much cheap wax. **"Old English"** Floor Wax is always the same—THE VERY BEST—no matter what the cost.

That's why it proves to be the most attractive, most economical, most easily applied, most satisfactory finish.

For Floors, Furniture and All Interior Woodwork

It is equally suitable for the finest inlaid hardwood floors or plain pine floors. It never flakes nor becomes sticky, nor shows heel marks or scratches. It preserves the floor and is sanitary. You can always rely on

Old English Floor Wax

"The Wax with a Guarantee"

Perhaps you are interested to know more about how to make floors beautiful and keep them so. Then by all means you should

Send for our New Book—Free
"Beautiful Floors—Their Finish and Care"

It gives valuable, expert advice in plain terms on such subjects as

- Woods Fit For Flooring
- Cleaning and Polishing Hardwood Floors
- Finishing New Floors
- Finishing Old Floors
- Stopping Cracks in Floors
- Care of Waxed Floors
- Finishing Kitchen, Pantry and Bathroom Floors
- Finishing Dancing Floors
- Finishing Furniture and Interior Woodwork, etc., etc.
- Removing Varnish, Shellac or Paint

"Old English" Floor Wax is guaranteed to give satisfaction when used as directed or money refunded.

Sample Free but you must use it as directed 1, 2, 4 and 8-lb cans, 50c. a lb. 1 lb. covers 300 sq. feet.

Sold by high class dealers in paints and finishes. Mention your dealer's name in writing for the free sample and the book, and if he hasn't "Old English" Floor Wax you may order it from us

A. S. BOYLE & CO.
1913 West 8th Street, Cincinnati, Ohio

Also Manufacturers of "BRIGHTENER"—which keeps floors clean and bright all the time.

this kind occurs, but that it does come, and that when least expected, has been my experience.

Whenever it is necessary to use lumber for the frame it should be of sound stuff, free from knotholes, or, if these do exist, they should be masked with pieces of tin securely nailed down.

In former years I have been content with a six inch slope to the sash, but have become convinced that is much too little, and the new beds show a fall of twelve inches; this has proven none too much, as it sheds water far more perfectly than a lower pitch. The width of the frames will depend upon the sash, but should not be too wide to reach across easily, probably about three feet, and as long as desired.

The pit should be dug the entire length of the hotbed range, and partitions used to separate it into as many sections as desired. In building the walls, if strips of inch stuff is tacked to the forms at the point where the sash meet, it will, when removed, leave a slot into which partitions of three-fourth inch stuff can readily be slipped. The object of partitions is to allow the various classes of stuff raised in the beds to receive just the condition they require. Cabbage, cauliflower, asters, pansies, and the like require plenty of air and a less high temperature than tomatoes, peppers, eggplants and other heat loving vegetables. Then too, one does not care to mix up flowers, bulbs, cuttings and vegetables in one and the same bed, and the partitions give the isolation of separate frames.

The usual florists' sash are three by six feet, but the ordinary glass used is subject to many accidents and is likely to prove, in the end, an expensive feature of the hotbed, and I am now substituting a quarter inch reinforced ribbed glass. This is somewhat expensive and has the further disadvantage of being heavy to handle, but that is not a serious objection where the sash is hinged to the frame of the bed with loose pin butts, and the satisfaction of knowing that no ordinary accident will break them is worth the extra expense, and greater warmth is afforded by their use.

The top of the frame should have a frame of two-by-four hardwood lumber bedded in to receive the sash. Where the hotbed is constructed against a building, an excellent way to lift the sash is to run a strip of two-by-four along the face of the building above the beds, and attach a pulley opposite center of each sash, over which a cord from the sash will run, and raise and lower them by this means. The loose end of the cord should run through a groove in the edge of the sash and have knots at intervals to adjust it.

This is the substantial, permanent form of hotbed construction, but let no one be deterred from enjoying the advantages of the beds because a bed of this kind seems unattainable; excellent results may be achieved by using waste lumber about the place and discarded window sash, providing all is made tight, and wind, cold and vermin proof; even slight frames of wood made to rest on the ground over the pit, and put together with pegs so that they may be taken apart later and stored as lumber, the beds filled up and leveled off or planted to flowers, will be far and away ahead of no beds at all.

If the soil is good where the beds are located the best of the surface soil should be saved to use in the beds and the rest removed. When the time has arrived for putting the beds in commission, which will be any time from the first of March to the first of April according to the latitude, secure a supply of fresh horse manure sufficient to fill the entire pit to overflowing. This should be gathered in the morning from that which has accumulated over night in the stables. It should be

mixed with an equal quantity of straw or leaves and may be placed at once in the pit, pressing it lightly into the corners but not packing it down. If very dry it may be sprinkled with hot water and the sash should then be closed and the mass left to heat.

Professional gardeners usually place the manure in a large pile to heat, and turn it over once or twice to insure the even heating of the mass, but this course is hardly practicable in a small private plant, as to handle a small pile in this way would retard its heating indefinitely; it needs the protection of the pit to bring it to an active state of fermentation, and should not be disturbed after that has once begun more than is necessary to bring it into an even temperature and firmness of mass.

When the mass is thoroughly heated in all its parts, especially in the corners, which may readily be ascertained by thrusting a fork into it for a few moments and feeling of the tines when removed, it should be tramped down firmly, making the surface as level as possible. Over this fresh manure I always like to place an inch or two of old, well-rotted manure made as fine as possible. This is to furnish food for the plants and prevent their entering the fresh manure, which would seriously burn, if it did not actually kill, the tender plants. One sometimes sees the plants in the hotbeds apparently burned by the sun, though much care may have been exercised in airing and shading the beds, but usually, if a few of the plants were pulled up, it would be found that not the tops but the roots have been burned, by contact with the raw manure.

Over the manure about five inches of good, rich soil should be placed, and it will be well if the last inch of this is sifted through a sand sieve to remove all stones, sticks and bits of roots, as many of the seeds to be sown will be very fine and would not do their best if planted in rough soil. The soil should be leveled off smooth and as nearly level as possible, in order that the water used in watering may not run and wash the seeds in the soil. The soil should be moist but not wet at the time of sowing the seeds, and if too dry it will be well to water lightly with a watering pot rose and allow to partially dry out before sowing.

Plant seeds of plants requiring the same temperature and conditions in the same section of the hotbed. Those requiring little heat and abundance of air had better be at one end, where the sash may be left entirely open at times without affecting the rest of the beds. The partitions should be so arranged as to close the juncture of the several sash, so that when one is open its neighbor will not be affected.

As far as possible it is desirable to plant seeds which germinate at about the same time in the same part of the bed, as they are more easily handled. All seeds should be sown in little plats separated from the other plats by thin strips of wood, and each plat distinctly labeled with name and date of sowing and, when known, the period at which it germinates.

Very small, fine seed do not need to be covered, merely pressed into the soil with the hand, or a piece of board with a handle on one side kept for just that purpose; somewhat coarser seed may be sifted over the surface and fine soil or sand sifted over it and the whole pressed down, while seeds of appreciable size may be sown in shallow drills and the earth drawn back over them and pressed down, while large seeds should be covered their own thickness with earth; but in all and every case the soil must be firm above them. After all is done the soil may be lightly watered with a rubber sprinkler or a very fine rosed watering

WASHES without IRONING

Serpentine Crepe

Makes Very Dainty and Serviceable

CURTAINS DRAPERIES AND SCREENS

SEND FOR FREE SAMPLES

PACIFIC MILLS, BOSTON

Bound Volumes of American Homes and Gardens

Volume for 1905 $3.50
Volume for 1906 $5.00
Volume for 1907 $5.00

MUNN & CO., Publishers 361 Broadway, New York

Wall Papers and Wall Coverings

A PRACTICAL HANDBOOK

for Decorators, Paperhangers, Architects, Builders and House Owners, with many half-tone and other illustrations showing the latest designs

By ARTHUR SEYMOUR JENNINGS

EXTRACT FROM PREFACE

THE author has endeavored to include characteristic designs in vogue today, and to give reliable information as to the choice of wall papers as well as to describe the practical methods of applying them. In dealing with matters concerning decoration there is always the danger of leaning too much toward an ideal and of overlooking the practical requirements of commercial life. The author hopes that he has been successful in avoiding this fault, and that his book will be regarded as both practical and useful.

One Large 8vo Volume, Cloth. $2

MUNN & CO., 361 Broadway, NEW YORK

Refinish a Piece of YOUR Furniture at OUR Expense

Let us send the Materials Free

WE WANT a sample of wood finishing done with our preparations in your home. We will send the materials to do the work. Here they are:

A bottle of Johnson's Electric Solvo to quickly remove the old finish—

A bottle of Johnson's Wood Dye (you to choose the color from our 14 different shades) to color the wood—

A sample of Johnson's Prepared Wax to give that beautiful "hand-rubbed" effect—

And our illustrated guide book for home beautifying which includes complete color card and tells how to finish and refinish wood.

No doubt you have some piece of furniture that you prize highly, yet do not use on account of the worn condition of its finish, or because it does not harmonize with other furniture or decorations.

Use this outfit, which we want to send you free, for refinishing it, and you will be surprised to learn how easily the work is done and the beauty of the result.

May we send you these three packages, and the valuable six-color book, free at once? Learn from the test the beautiful effect obtained from the use of

Johnson's Wood Dye

It is not a mere stain. It is a deep seated dye—sinking into the pores of the wood and bringing out the beauty of the grain. When finished with Johnson's Prepared Wax you have a permanent finish of real beauty and most artistic effect. We want to give you these three packages at once. Send twelve (12) cents to partially pay cost of packing and postage—using coupon below for your convenience.

Johnson's Wood Dye comes in 14 Standard shades:

No. 126 Light Oak
No. 123 Dark Oak
No. 125 Mission Oak
No. 140 Manilla Oak
No. 110 Bog Oak
No. 128 Light Mahogany
No. 129 Dark Mahogany
No. 130 Weathered Oak
No. 131 Brown Weathered Oak
No. 132 Green Weathered Oak
No. 121 Moss Green
No. 122 Forest Green
No. 172 Flemish Oak
No. 178 Brown Flemish Oak

Half-pints 30c; pints 50c. Johnson's Prepared Wax, 10c and 25c packages. Also sold in large sizes. For sale by all leading paint dealers. Send coupon today to

S. C. Johnson & Son, Racine, Wis.
"The Wood Finishing Authorities"

Please Use This FREE COUPON

I accept your offer and enclose twelve (12) cents to partially pay postage and packing on Free Booklet Edition AH-4, one sample bottle of Johnson's Wood Dye, shade No. ..... one bottle of Johnson's Electric Solvo, and a sample of Johnson's Prepared Wax.

Name .....
Address .....

I usually buy my paint at store of

Name .....
Address .....

Heat that makes complete

There are thousands of houses that need only to be furnished with the *home-making* comfort of Steam, Hot-Water, or Vacuum heating to secure good tenants or ready purchasers. No one will long live in a poorly heated house, and the vacant house goes to pieces much faster than one which is occupied.

AMERICAN RADIATORS & IDEAL BOILERS will attract and hold tenants at 10% to 15% higher rentals; property sells quicker, and owner gets back the full cost of the heating outfit. IDEAL Boilers and AMERICAN Radiators are annually replacing thousands of old-fashioned heating equipments that have been found wasteful and wanting in OLD cottages, houses, stores, churches, schools, etc. Ever hear of any one going back to other forms of heating once they have tried our way? Any argument in that to you?

Don't delay investigating this well-paying permanent investment with its marked fuel, labor, and repair savings, besides the greater comfort, health protection, cleanliness, safety, and durability.

A No. 3015 IDEAL Boiler and 175 ft. of 38-in. AMERICAN Radiators, costing the owner **$118**, were used to Steam heat this cottage.

A No. 3-22 IDEAL Boiler and 400 ft. of 38-in. AMERICAN Radiators, costing the owner **$205**, were used to Hot-Water heat this cottage.

At these prices the goods can be bought of any reputable, competent fitter. This did not include cost of labor, pipe, valves, freight, etc., which installation is extra and varies according to climatic and other conditions.

Just the season to get the services of the most skillful fitters. *Prices are now most favorable.*

Write to-day for free valuable book, telling how to save heating dollars and the way to save buildings from emptiness and decay. Our definite information and booklets put you under no obligation whatsoever to buy.

Showrooms all large cities **AMERICAN RADIATOR COMPANY** Write Dept. 6 CHICAGO

Don't Injure Your Hair with Old-Fashioned Irons; Use

The "DEL" Electric Curling Iron

You can surpass the work of any skilled hair dresser who uses an old-fashioned curling iron.

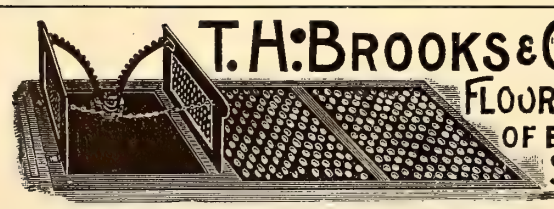
The only detachable curling iron ever invented. The "Del" has nothing to get out of order—nothing to break or bend—offers no chance to scorch the hair or burn the fingers. No soot or smoke from gas or lamp to soil the hair. No fear of making the hair coarse or brittle. The "Del" saves all these and beautifies the hair, for **its electric heat instills new life, while its highly polished surface imparts a glowing lustre.** The "Del" is easily attached to any ordinary electric light fixture, and so simple any lady can use it. It makes more **beautiful and lustrous Marcel Waves, Curls and Pompadours** than is possible with any old-fashioned curling iron and causes the hair to remain in curl for several days longer.

The "Del" is quickly heated from the inside—evenly heated from end to end at just the proper degree for hair dressing. The heat is retained to allow the iron to be detached and used in another room if desired. It never heats in spots and cannot be overheated to scorch or injure the hair like the ordinary iron. You will be surprised and delighted to find how quickly, easily and perfectly you can dress your hair in the latest fashion with the "Del."

Try the "Del" 5 Days at Our Expense

Then, if you are willing to part with it, send it back—we'll pay express both ways—and cheerfully refund your money. Price of the "Del" is $3.75, express prepaid. Send to us if your local dealer or electric station cannot supply you.

DEL SALES COMPANY, Dept. N, Monadnock Bldg. CHICAGO, ILL.



T. H. BROOKS & CO. CLEVELAND, O.
FLOOR & SIDEWALK LIGHTS.
OF EVERY DESCRIPTION.
SEND FOR CATALOGUE.

The expense and annoyance of painting will not recur every year or two if you use

DIXON'S SILICA-GRAPHITE PAINT

the "Proven Shield for Steel Work." Durability records in all climates; write for a few.

JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

pot, the surface covered with newspapers, and the sash closed and the seed left to germinate.

As soon as the seeds have germinated and appeared above ground air and light will be required, and this must be given with discretion for the first few days or until the first true leaves appear, but insufficient air and light will result in spindling plants, which will give poor results if, indeed, they recover at all. Carefully avoiding chilling or sunburn the more air and light the plants receive the better, but care must always be taken to avoid a draft across the plants, and when the sash is raised above tender plants it is a wise precaution to place a screen against the opening on the windward side. The beds must not be allowed to become overheated, as the temperature rises very rapidly under a hot sun and falls as rapidly when the sun goes under a cloud or beyond the range of the hotbed, so that many shiftings of the sash become necessary during the course of a day in the changable weather of early spring.

When the young plants have become established and are growing freely, more and more air and light should be given until the sash may remain open the greater part of the day, replacing them at first with lath screens and later with those of wire until, as the nights grow warmer, the sash may remain open thoughout the twenty-four hours.

As the time approaches for planting out in the open ground the plants should have attained sufficient size to make a rapid growth from the start; this will more especially be the case if the precaution has been taken to transplant a portion of the plants into fresh rows, and so leave the remaining plants with sufficient room to develop a stocky growth. A cold frame is a very useful adjunct to a hotbed, as it allows of thinning out the overcrowded plats and giving more favorable surroundings. Asters, cabbage and cauliflower especially benefit by transplanting.

The night before transplanting the bed should be thoroughly watered, so that the plants may be in the best possible condition for removal, and everything should be in readiness for the work so that the plants may be gotten into the ground as expeditious as possible after they are lifted.

THE HEATING APPARATUS FOR THE SMALL COUNTRY HOUSE

(*Continued from page v*)

the return pipes to the bottom of the boiler to be reheated.

The steam plant is slightly different in its mechanism and fittings. The boiler is practically the same with the exception that the steam boiler requires a steam gauge, safety valve and water column with gauge, water gauge and glass.

The piping as well as the radiators are larger in a hot water plant than in a steam plant, the hot water pipes being two inches and the steam one and one-quarter inches (if a two-pipe system is used, a one-inch flow and a three-quarter-inch return). Hot water radiators should be about forty per cent. larger than the steam radiators. In a steam plant each radiator must, further, have a vent to let the air out, or the steam will not enter the radiator.

Buy a good boiler. There are a great many varieties. Sectional boilers, composed of various cast iron sections connected together by push nipples or by drums above and on both sides, are the best for the country house. They may be added to should the original boiler prove insufficient, or the house be enlarged. They are light and easy to transport and set up, and in case of an explosion it will confine itself to but one or two sections. A cast iron base forms the ashpit. The boiler should

GOING TO BUILD? — By All Means Consider This

We will *save you money* on plans and give you *service second to none* in the country

From No. 3 Book

Through our three handsome books of Residence Designs, we are supplying the need for practical and successful plans at the lowest practical price. Every set of plans ordered is furnished in duplicate—triplicate, if you need them, and you can have the house just as you want it because we write the specifications to conform to your desires. No stereotyped specifications. No extras or strings tied to the price of plans.

The books are as follows, sent prepaid on receipt of price.

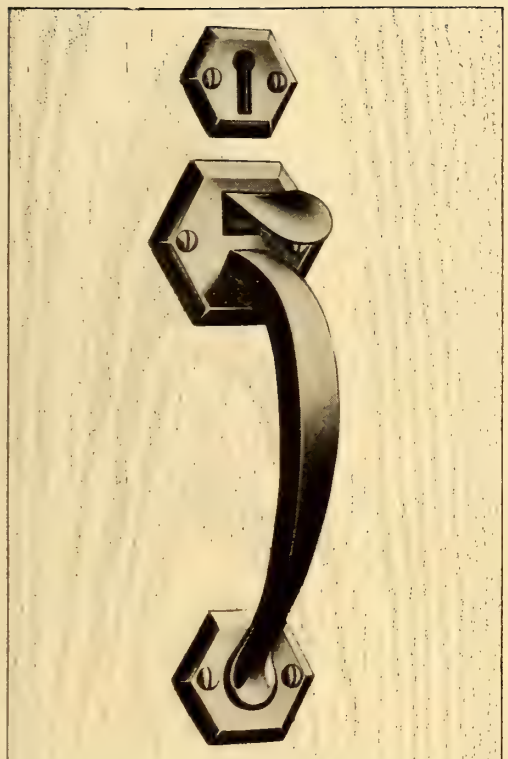
From No. 1 Book

No. 1. 25 Designs of Residences ranging in price from $1,500 to $5,000 . . . $.50
No. 2. " " " " " " " " $5,000 to $20,000 . . . $1.00
No. 3. " Cement Designs of Residences ranging in price from $2,000 to $20,000 $1.00

Photographic cuts of Flat and Apartment Houses, Schools, Theatres, Clubs, Churches, etc., 10c. each. Note: We *rebate* price of books or cuts on first order for plans.

ARTHUR G. LINDLEY CO., Architects, Parker Building, Schenectady, N. Y.

Dept. C. Bank and Business References



The Lasting Impression of Artistic Hardware

Let the hardware trimmings about your house reflect your chosen architectural scheme and create an impression of true taste and refinement in home finishing. Whatever the woodwork or decoration, plain or elaborate, perfect harmony is assured by

SARGENT'S Artistic Hardware

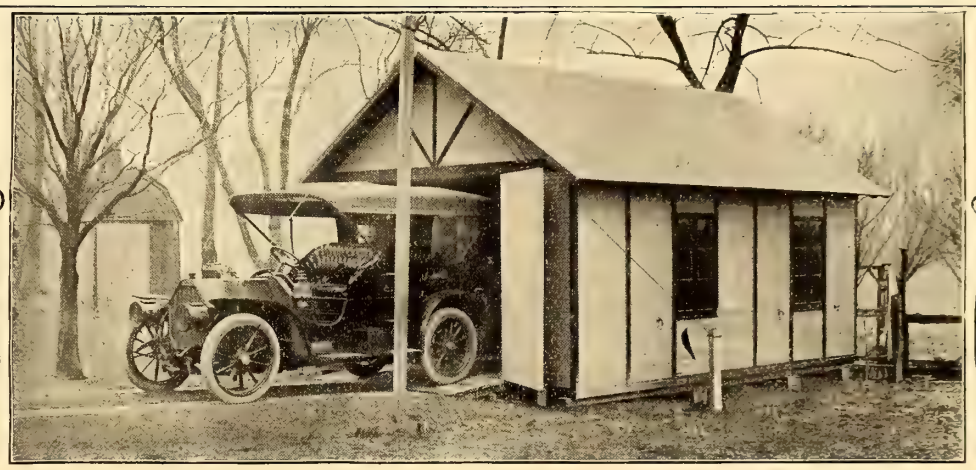
Illustrations and descriptions of over seventy distinctive designs are contained in

Sargent's Book of Designs—Free

Also explains the Easy Spring Principle of Sargent's Locks.

The **Colonial Book**—showing Cut Glass Knobs, Door Knockers, and other Colonial fittings—also free on request. Write at once.

SARGENT & CO., 156 Leonard St., New York.



THIS HANDSOME GARAGE (15 x 21 feet) ONLY $234

This is but one of our many styles of CORNELL PORTABLE GARAGES

Cornell Portable Houses are strong, serviceable buildings, wind and water proof, inexpensive and artistic. They are built complete in every particular at factory, constructed in sections, of first-class materials, painted any colors desired and shipped anywhere. We pay the freight. Are quickly and easily erected by bolting sections together. They cost much less than what local builders charge, besides saving you all annoyance of building. We make Portable Houses of all kinds, such as Summer Cottages, Garages, Children's Playhouses, Camps, Stables, Stores, Studios, etc. Handsome illustrated catalog upon request.

WYCKOFF LUMBER & MFG. CO., 410 Adams Street, ITHACA, N. Y.

VIOLET BLUE ROSE

A Remarkable Novelty

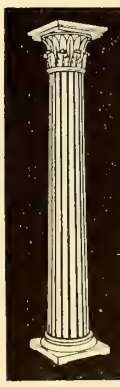
The New Rambler (Violet Blue), hailed by the German rose growers as the forerunner of a genuinely cornflower blue rose, is a seedling of Crimson Rambler, very vigorous and hardy.

For descriptions of this great novelty, as well as many others, send for Booklet.

ELLWANGER & BARRY

Mount Hope Nurseries

Box TT, Rochester, N. Y.



UNION METAL COLUMNS

FOR PORCHES AND PERGOLAS

Dignified classical designs.
Made entirely of metal in all sizes up to 40" in diameter.
Finish to match any wood perfectly.
Will not *split*, *check* or *rot*.
Stronger and more *durable* than wood.
Last longer—Cost no more.
Write now for Booklet "F-4" describing UNION METAL COLUMNS (PATENTED)

Union Metal Manufacturing Co.
406 Clifton St., CANTON, O.

Elkhart Buggies

are the best made, best grade and easiest riding buggies on earth for the money.

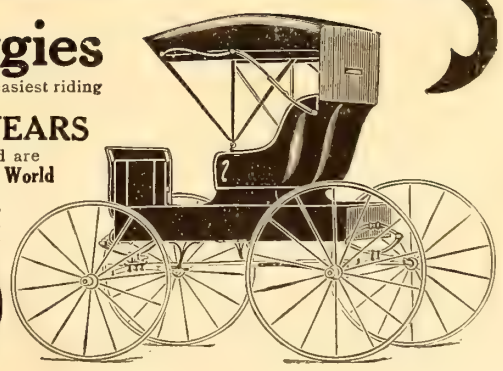
FOR THIRTY-SIX YEARS

we have been selling direct and are **The Largest Manufacturers in the World** selling to the consumer exclusively.

We ship for examination and approval, guaranteeing safe delivery, and also to save you money. If you are not satisfied as to style, quality and price you are nothing out.

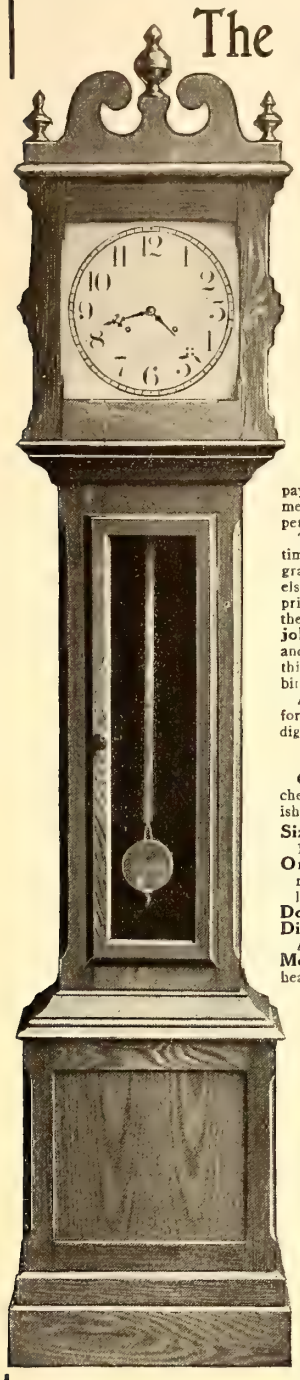
May We Send You Our Large Catalogue?

Elkhart Carriage & Harness Mfg. Co.
Elkhart, - - - - Indiana



SHIPPED YOU
For Inspection

FREE



The ITHACA HALL CLOCK

All Charges Prepaid

We ship this clock direct from our factory to you upon receipt of your request. We prepay charges. If it is not what you expected or as represented, ship it to us, charges collect. Use it ten days and if satisfactory remit us its price, $29.50.

Partial Payment Plan. If you prefer to pay for this clock by installments, remit us $8, and $3 per month for eight months.

This beautiful Colonial time-piece, exactly like photograph, cannot be duplicated elsewhere for several times the price we ask. We eliminate the profits of **salesmen, jobbers and retailers,** and give you the benefit of this saving. An appropriate birthday or wedding gift.

A hall clock is a treasure for any home. It lends a dignity to the home.

DESCRIPTION

Constructed of polished cherry, mahoganized or polished, selected oak.

Size—Height 7½ ft., width 19 in., depth 11 in.

Ornaments—Top ornaments, brass, polished and lacquered.

Doors—French Crystal.

Dial—12½ in. square, black, Arabic figures.

Movement—Our standard heavy brass eight day movement. Polished brass visible pendulum. Strikes hours and half-hours on soft-toned gong.

Each clock is guaranteed for 10 years.

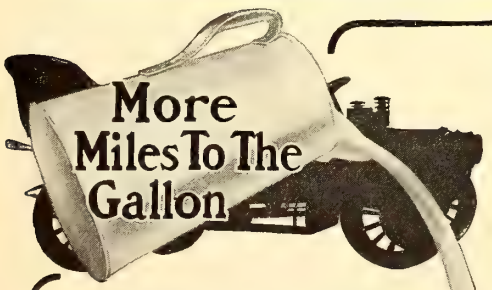
State if oak or mahoganized cherry is wanted.

If you would consider the purchase of this clock, write immediately, requesting us to forward it to you *free of all charges, for inspection,* according to above terms.

The Ithaca Calendar Clock Company
14 Adams St., Ithaca, N.Y.
Established 1865

Makers of the world-renowned Ithaca Calendar Clocks.

If interested in calendar clocks, send for catalogue.



UNLESS your car has perfect lubrication, your gasoline is used for friction instead of miles of speed. The use of Vacuum MOBILOIL saves the wear of your car, the waste of gasoline, and most of the money that goes for repairs.

Vacuum MOBILOIL is made in six different grades to suit the lubrication of every automobile made. One of these grades is exactly adapted to the needs of *your* car.

Its use is an investment that saves expense. It will end forever your lubrication troubles, and add to your pleasure and the life of your car.

Write for free booklet showing grade of MOBILOIL adapted to the use of every car. Gives track records to date, and money-saving motor hints

VACUUM

MOBILOIL

in barrels and in cans with patent pouring spout, is sold by dealers everywhere. Manufactured by

VACUUM OIL CO., Rochester, N. Y.

always be covered with asbestos or air-cell board and asbestos cement coating in order that heat shall not be lost in the cellar.

The average boiler—an "Ideal" is an excellent one—costs for a $10,000 house from $175 to $200. To be both economical and satisfactory, it should be sufficiently large and of few and simple parts. It should offer the least possible resistance to free circulation. It should be stronger than any strain which might be placed upon it, and should have a spacious iron firebox with a water space around it and set deep below the fire door. The water line in the boiler should at least be set two feet below the main horizontal flow pipe. Having these qualifications, it should be as easy to run as a furnace. You can regulate the boiler so that it will run itself at least for eight hours. Its consumption of coal in the supposed $10,000 house is from one and one-half to two tons a week. Small or large egg coal is the best—the large furnace coal does not give as good results. The best types of boilers are, further, those that can be cleaned regularly. The tubes through which the hot gases pass to warm the water in the boiler should be cleaned with the flue brush every week. It may be done in a few minutes, while fire is on. If they are not cleaned the tubes fill with soot, one of the best non-conductors, and the gases pass through to the chimney without heating the water.

Every good boiler is provided with an automatic device consisting of a rubber diaphragm on which the steam acts and which controls the ashpit door and check draft in the smoke pipe. As the pressure rises during the night, the ashpit door closes, shutting down the draft, the check door opens, cold air rushes in, the pressure goes down and is held constant. This continues regulating itself for about eight hours. If the automatic damper regulator device is not used or supplied on the boiler, what will happen is the following: The fire is banked high in the evening, slowly it becomes hotter and the pressure rises in the boiler to its limit; after about three hours fire and pressure go down, the coal is exhausted, and recoaling becomes necessary, or if omitted, the house is cold in the morning and the fire out.

A two-pipe system is not necessary for an efficient steam plant. It certainly is better and also costs about one-eighth more, owing to the additional piping and labor. If, however, a single pipe is used and the pipe is properly graded, I would, especially in houses where the substitution by steam of an old, inadequate furnace is contemplated, recommend a single pipe system. The cutting and fitting in walls and floors is much less serious.

All supply pipes and returns should be covered with a protecting and non-conducting material. A cheap "paper wrapping" is often suggested by the contractor. This is practically worthless. By proper covering, a saving in fuel and addition of heat is very soon obtained. Good covering of air-cell, asbestos or mineral wool, sewed into a painted canvas jacket, very soon pays for itself.

Insist upon every pipe, as well as every radiator, being separately controlled by a valve, and that dampers shall control all air connections. In a hot water plant it is especially important that each line should, in the cellar, have its separate valves and "draw-off cock," so that the special faulty line may be drained. A steam leak you hear hissing, but hot water you do not hear until the flood comes.

A hot water plant differs from a steam plant in having somewhere in the top of the house, above the highest point supplying heat, an expansion tank. Every twenty gallons of water becomes twenty-one gallons in going from cold water to 212 degrees, or the boiling

The most important thing in buying a hammock or hammock-couch is to look for the name **PATTERSON.** For "Patterson," on a hammock or couch, stands for *quality* and *value*, and is a guaranty of strength, safety, style and lasting satisfaction. **"If it's made by Patterson—you take no chances."**

Patterson

The Patterson Hammock-Couch can be used with or without a mattress. Has pocket attached. Valance can be tied up to form a back rest or wind shield, making it the *only complete* couch. With both sides tied up you have a cosy nest for baby. There is *safety* in Patterson Hammocks.

Ask the dealer for Patterson Guaranteed Hammocks and Couches. Don't take a substitute. If he can't show the **PATTERSON,** with the name on, write us and we will see that you are supplied.

Write for illustrated book "Hammock Comfort."

Patterson Mfg. Co. Indiana Avenue and A Street
Dept. H, Philadelphia
Makers of guaranteed hammocks since 1887

Send for THIS BOOK TO-DAY

This book "*Modern Bathrooms*" will show you how to make your bathroom the most modern and comfortable room in your house. It explains how a modern bathroom adds an actual cash value to your home out of all proportion to the low cost of installation.

"Modern Bathrooms" tells you how to plan, buy and arrange your bathroom and illustrates many beautiful and inexpensive as well as luxurious rooms. It shows the cost of each fixture in detail together with many hints on decoration, tiling, etc., and gives expert information on kitchen, laundry, and toilet room equipment. If your home is a source of pride to you, you want this book.

Write for a copy TO-DAY. Enclose six cents for postage, and give us name of your architect and plumber, if selected.

Standard Sanitary Mfg. Co.
Dept. 23 **Pittsburgh, Pa., U.S.A.**

For Five Dollars

American Homes and Gardens and Scientific American

SENT TO ONE ADDRESS FOR ONE YEAR

Regularly Six Dollars

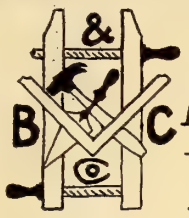
DON'T BE KNOCKED OVER

By Stenches From Backyard Debris

Are conditions at the back of *your* house as attractive *as in this picture?*

Why not look up **The Stephenson Method now,** and if satisfied protect the health of the family by installing **The Stephenson UNDERGROUND GARBAGE RECEIVER** which removes all objections of the old swill-tub nuisance.

Sold direct *Send for Circular*
C. H. STEPHENSON, Mfr.
21 Farrar Street **Lynn, Mass.**



A CRAFTSMAN HOUSE FROM CORNERSTONE TO CHIMNEY-POT CURIOUSLY SUGGESTS THE CHARACTER OF ITS UNIQUE INTERIOR

We have other attractive types in Colonial, Old English, Renaissance and Flemish, all of them true to a combination of art, comfort and economy, including fireproof features and handicraft interiors; we build them anywhere, give bond of completion and lend from 60 to 70 per cent. if desired; we invite your inspection of many attractive houses built in last few years, also numerous sketches at this office.

BUILDERS AND CRAFTSMEN COMPANY

38 WEST 32ND STREET NEW YORK

INVESTIGATE OUR BUILDING METHOD

Cottage Designs

THESE books offer to architects, builders, homeseekers and investors by far the most complete collection of plans ever brought out, while the price is so low as to place them within the reach of all who have an interest in the building of homes. The designs are compiled with a view to representing all grades of cost, from the simplest types of cottages, as illustrated in the first series, to the comparatively elaborate structures reaching to $10,000 or more, in cost, treated in the fourth series, so that examples are given covering nearly every requirement, with respect to cost, in inexpensive homes.

No. 1. Cottage Designs with Constructive Details

A series of twenty-five designs of cottages, most of which have been erected, ranging in cost from $600 to $1,500; together with the details of interior and exterior finish, all drawn to convenient scale, and accompanied by brief specifications. Illustrated with 53 full-page plates of floor plans, elevations and details.

No. 2. Low Cost Houses with Constructive Details

Embracing upward of twenty-five selected designs of cottages originally costing from $750 to $2,500, accompanied with elevations, floor plans and details of construction, all drawn to scale, together with brief descriptions and, in many instances, full specifications and detailed estimates of cost. Illustrated by 61 full-page plates of floor plans, elevations and details.

No. 3. Modern Dwellings with Constructive Details

A selection of twenty designs of artistic suburban dwellings erected in various parts of the country, at costs ranging from $2,000 to $5,000; embracing floor plans, elevations and constructive details, showing interior and exterior finish, and drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions, from photographs of the completed structures, and 61 full-page plates of floor plans, elevations and details.

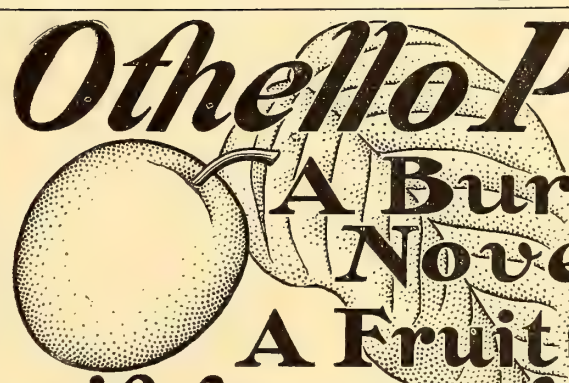
No. 4. Suburban Homes with Constructive Details

Comprising twenty selected designs of attractive suburban homes, ranging in cost from about $3,000 upward; embracing floor plans, elevations and constructive details, showing interior and exterior finish, all drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions from photographs of the completed structures, and 75 full page plates of plans, elevations and details.

ONE DOLLAR EACH, POSTPAID
(Sold Separately)

MUNN & CO. *Publishers of* SCIENTIFIC AMERICAN
Three-Sixty-One Broadway, New York

Othello Plum



A Burbank Novelty. A Fruit Tree with bronze leaves.

For every Garden and Lawn

"A Horticultural Gem of use and beauty,"— for fruit and ornament, it should be the first tree planted in every garden.

Perfectly hardy, of upright, vigorous growth, with the most brilliant reddish-purple foliage; a prolific bearer, fruit deep crimson about one inch in diameter, ripening before the earliest of ordinary plums.

We offer this wonderful new Tree with its double use, to the public, this Spring of 1909 for the first time; Vaughan's Seed Store owning and controlling the original Tree from Luther Burbank.

Our new 160 page catalogue of Seeds and Plants, with beautiful color plate of Othello Plum, mailed free if you have a garden.

Special Prepaid Prices	Each	3 for
Size A-5 feet	$2.25	$6.00
Size D 2½ feet	1.25	3.00

Vaughan's Seed Store FREE CATALOG
84-86 Randolph St. CHICAGO
or 14 Barclay Street, NEW YORK

point. The tank receives the increase in the volume of water due to the expansion by heat and is connected with both flow and return pipes to enable proper circulation and hinder freezing, and has an overflow pipe. This had better be carried inside the house to a sink than be merely allowed to drip out over one of the roofs.

There are many different kinds and sizes of radiators made in sections and connected together. The standard and consequently least expensive height is thirty-eight inches. Each section is two and a half inches wide. You can procure flat ones to hang on the wall if your walls and bathrooms are narrow; you can procure corner and curved radiators. You can readily place one under the window sill or around a bay, forming your window seat, with a wooden front and top concealing the radiator, first lining the wood with sheets of asbestos and galvanized iron. The registers should be placed at top and bottom for proper circulation of air. When you place the radiators by the outside walls or underneath the windows and bring in to them a supply of fresh air through openings in the wall (often introduced through a space under the lower sash of the window), you procure what is called "direct-indirect heating." It is very simple to introduce the fresh outside air through small galvanized iron ducts into a small box at the bottom of the radiator. The ducts, as well as the box, should have dampers so that the cold air may in the severest weather be shut off. An "indirect" system is simply one where the radiator, of special pattern, is placed in the cellar, instead of the room, fresh air is brought in and circulated around the radiator which is hung on the cellar ceiling inside of a galvanized iron box, and then led through pipes to the registers of the various rooms. This method has the advantage of removing the disfiguring radiators from the rooms, but costs also considerably more than a direct system. Where a direct steam plant for our $10,000 house will cost $1,000, and a hot water plant about $1,350, the "indirect" hot water will cost $1,900. Of course the "direct-indirect" system has the very great advantage of providing an excellent means of ventilation at a very small cost. It introduces fresh air into the rooms and the same vitiated air is not heated over and over again.

Shall one install steam or hot water in the proposed dwelling? If the systems are well laid out there is little difference in the comfort procured. The initial cost of hot water is about one-third more than steam. On the other hand, it is noiseless and seldom gives the snapping you hear in steam plants. Whatever coal you burn you obtain results from, owing to the fact that the hot water will commence circulating at 120 degrees, while in steam you get no heat until 212 degrees. With a hot water plant, however, it will take you eight hours to cool off your radiators, while in a steam plant only twenty minutes. You also need larger radiators with hot water and you have the danger from flooding by the bursting of a pipe as well as from freezing when you have forgotten to drain the system before the winter.

The pros and cons seem to resolve themselves into this: If the country house is to be lived in all the year around, put in hot water; it is easier to regulate, merely some of the radiators have to be used and a small amount of heat generated and employed in moderate spring and fall weather, and running expenses thus cut down. If the house, on the other hand, is meant principally for summer and for quixotic week-end parties during the winter, use steam; you can heat it quicker, it will cost you less, and you need have no worry as to accidents through your carelessness or neglect.

CREX
GRASS CARPETS AND RUGS
TRADE MARK

From the PRAIRIES OF THE WEST

A few years ago the long, tough grass grown upon our Western Prairies was pronounced utterly useless, but to-day through aggressive minds and modern ideas, this really wonderful gift of nature has been brought into almost every home in the form of an attractive, sanitary and lasting floor covering, called

C-R-E-X

Quality and economy have established the reputation of Crex, while the beautifully blended colors and exclusive designs of both carpets and rugs meet every requirement of a richly appointed room.

CARPETS.—Solid colors—plain and striped effects—in all widths.

RUGS.—All sizes, in a large variety of exclusive designs and beautiful colors.

Caution:—Avoid imitations. The genuine bears the CREX label.

Sold by all Up-to-Date Carpet and Department Stores.

Send for ***Free*** Booklet H. Beautifully illustrated.

CREX CARPET COMPANY
377 Broadway, New York

Art Stone Urns

Will last for centuries without any care. Do not have to be taken in and stored during winter months. Will stand all freezing and frost. Do not have to be repainted in the spring, and plants thrive in them because the roots keep cool and damp. Don't fail to write for photographs with description and prices.

SIDNEY CEMENT STONE CO.
SIDNEY, OHIO

PROBLEMS IN HOME FURNISHING

(*Continued from page x*)

ever I go I am distracted or rested by wall papers. How can we avoid the glaring mistakes that one so often sees in wall decoration? In seeking simplicity I do not want uninteresting interiors, you understand?"

The demand for a quiet, restful treatment for the home walls seems to be on the increase, as there is a greater provision this year than ever before to meet this need. This is apparent in the many shades of gray and brown papers that are now on the market. Also, in the variety of semi-plain papers that are being shown. Some of the latter are in texture effect, which look on the wall like a piece of cloth—cheviot, chambray, linen, jaspe. Others are in unusual striped effects that, at a little distance, hardly show the stripe.

Still other noteworthy contributions to simple wall decoration are some plain papers to take the place of the ingrain, and new fabric effects instead of the older-fashioned burlap.

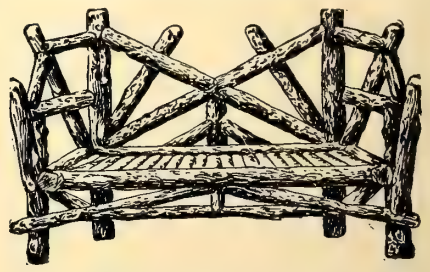
With so much to draw on this correspondent can be assured of succeeding in her effort to make her walls restful, and a good plan would be to select a warm gray for the sunny rooms and a deep tan for the north or west exposures. To give interest to the rooms some contrasting colors may be adopted in overcurtains, and pictures showing a good deal of color may be hung on the walls. The coverings for the furniture, door curtains and rugs will also contribute to the color effect. In the bedrooms the plain wallpapers may be brightened up by the cut-out borders as described in the answer to J. G. H.

A CORRECTION

Messrs. Bailey and Bassett have informed us that they were not the architects of Mr. L. W. Reid's house at Merion, Pa., which appeared in the March issue of AMERICAN HOMES AND GARDENS, but that the plans were drawn by Messrs. Morris and Vaux, of Philadelphia, Pa.

"Rustic Work" WHICH GIVES THAT ARTISTIC FINISH TO COUNTRY ESTATES

This beautiful Rustic Settee, delivered to your station **$10,** will last a lifetime.



Rustic Tea Houses, Boat and Bath Houses, Arbors, Pergolas, Back Stops for Tennis Courts, Rustic Bridges for Ravines, Entrance Gates, in fact Rustic Work of every description.

Give the Birds A Home

Rustic Bird Houses

One Room, $2.00
Two Rooms, $3.00

Send for catalogue and sketches or have our representative call upon you.

RUSTIC CONSTRUCTION WORKS, 33 Fulton St., New York

The Scientific American Boy

By A. RUSSELL BOND. 320 pages, 340 illus. $2.00 postpaid

A STORY OF OUTDOOR BOY LIFE

Suggests a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. Complete practical instructions are given for building the various articles, such as scows, canoes, windmills, water wheels, etc.

MUNN & CO., Publishers, 361 Broadway, NEW YORK

PAINT

CERTAINTY

H.S. H.S.

The Little Blue Flag is your Protection.

Mixing paint by hand is expensive—for you.

Results are never twice alike and painter's time at 25 to 60 cents an hour soon mounts up.

Besides, such paint is not dependable—the ingredients may be "strictly pure," but you can't be certain and if the paint is not good *after* you've applied it, how can you then get satisfaction?

Don't take these needless chances with mixed-by-guess paints. Use

Lowe Brothers High Standard Liquid Paint

—made with unerring machinery and backed up by a reputation of 35 years standing.

The "Little Blue Flag" on a paint can has come to stand for assured Quality, Uniformity, Economy.

A line of paints, enamels, and varnishes for every purpose—the varnishes as good as the paints.

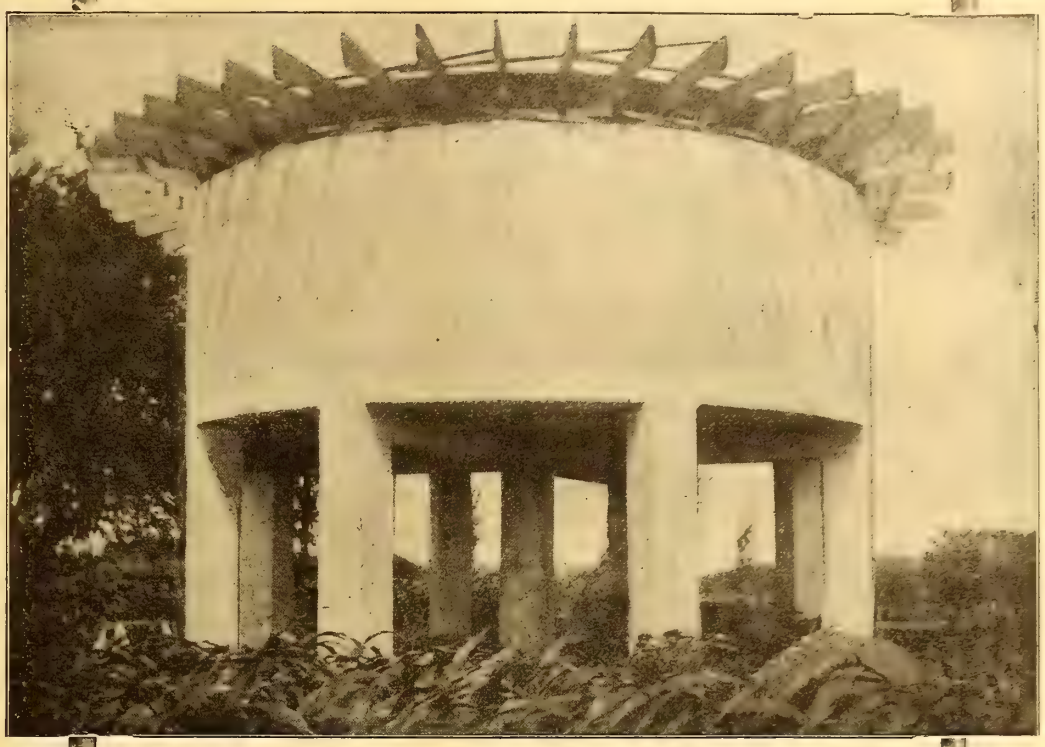
Vernicol—a beautiful finish for beautifying furniture, old woodwork, floors, etc.—all in one coat.

Write for Booklet, "The Owner's Responsibility."

THE LOWE BROTHERS COMPANY
450-456 E. Third St., Dayton, Ohio.
Boston New York Chicago Kansas City

FLOORS

ROOFS



A concrete tank erected on estate of Edmund Tatham, Katonah, New York

Frederick J. Sterner, Architect - - New York
De Lancey A. Cameron, Builder - - New York

Tank designed for storage supply of 15,000 gallons, built entirely of concrete reinforced with Clinton welded wire. Before roof was placed over tank, and during winter months, ice 10 inches thick formed on water stored therein. No cracks or leakage have developed.

Clinton Wire Cloth Company
CLINTON, MASS.

Ceilings Partitions

Fireproofing Departments:
ALBERT OLIVER, 1 MADISON AVE., NEW YORK
WASHINGTON: Rosslyn Supply Co., Colorado Building
CHICAGO: Clinton Wire Cloth Co., 30-32 River Street
BUFFALO, N. Y.: Buffalo Wire Works Co., Inc.
ST. LOUIS: Hunkins-Willis Lime & Cement Co.
SAN FRANCISCO: L. A. Norris, 335 Monadnock Bldg.
SEATTLE: L. A. Norris, 909 Alaska Building
CLEVELAND, OHIO: Carl Horix, 428 Garfield Building

The Very Design You Want

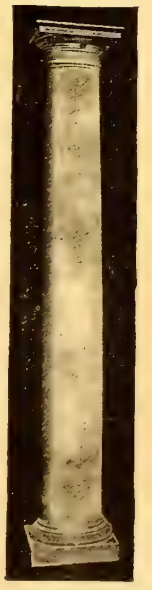
You may choose from the hundreds of designs we have. **Many of small cost,** and elaborate ones, too. Stewart's iron fence and entrance gates are artistic and permanent—mechanically right.

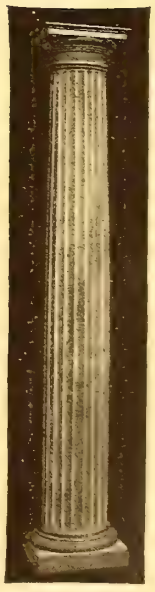
State work desired, how much fence you want, number of gates, style of building, etc. We will submit designs or photographs and estimates, take measurements and erect if necessary. Satisfaction **guaranteed.** Also fountains, vases, settees, stable fittings, tree boxes, lanterns and ornamental iron. Write for booklet. *Agents wanted.*

STEWART IRON FENCE

THE STEWART IRON WORKS CO.
1726 Covington St., Cincinnati, O.

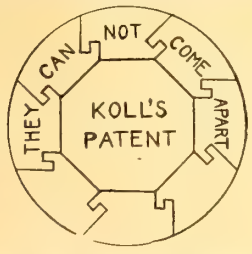
The LARGEST MAKERS of IRON FENCE in the WORLD





KOLL'S PATENT LOCK-JOINT COLUMNS

The Best for Pergolas, Porches or Interior Use are made exclusively by

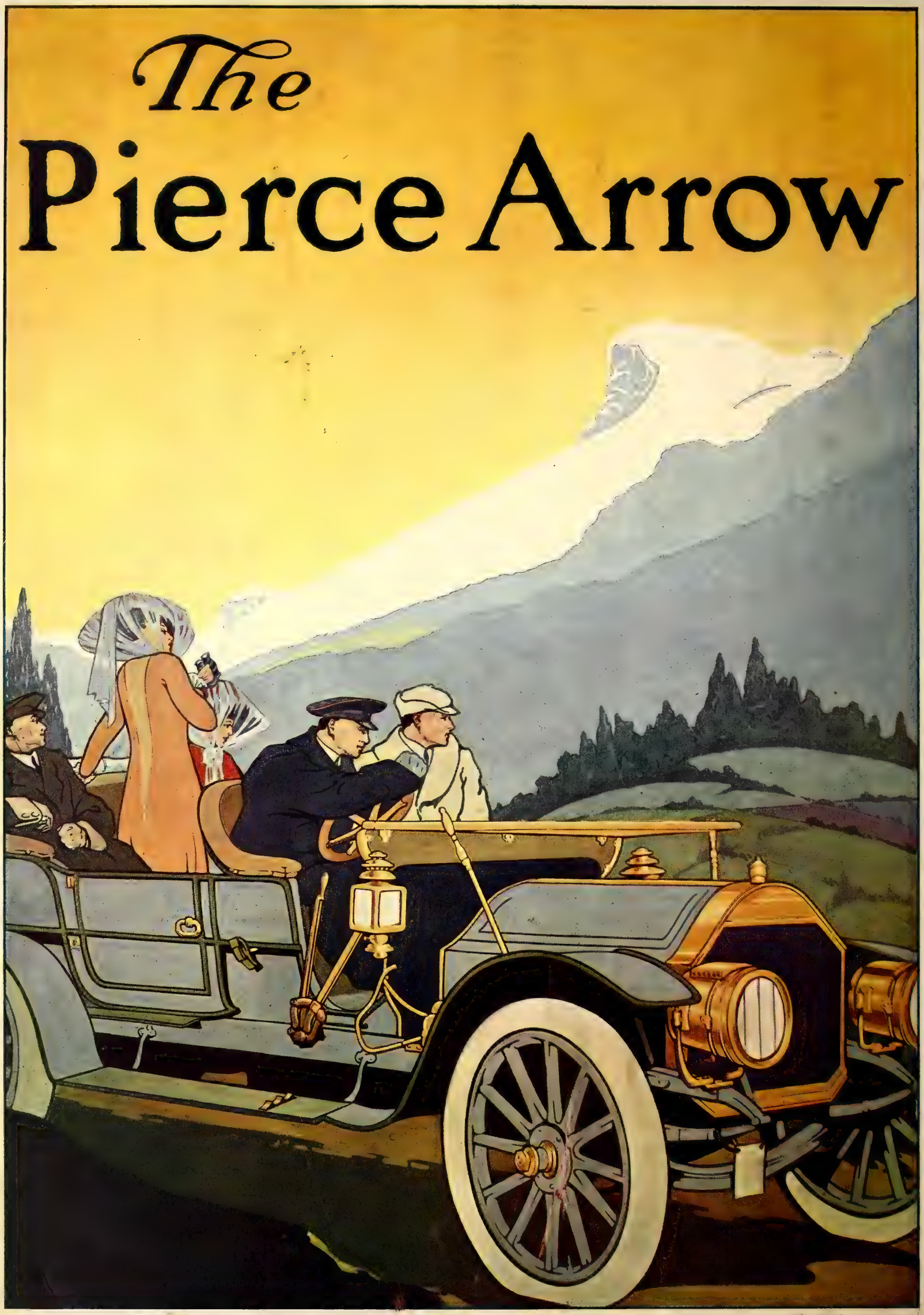


HARTMANN-SANDERS COMPANY

Elston and Webster Avenues
CHICAGO, ILL.
Eastern Office, 1123 Broadway
NEW YORK

Send for Catalogue A-19 of Columns, or A-29 of Sun-dials, Pedestals, etc. (See also "Sweet's Index.")

The Pierce Arrow



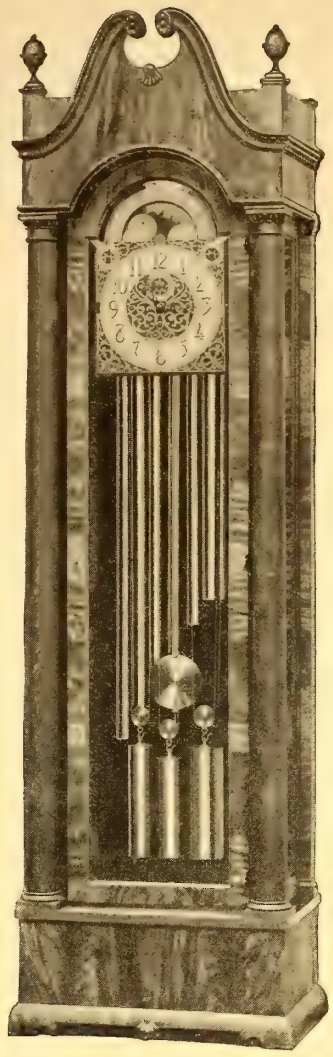
THE PIERCE-ARROW MOTOR CAR CO. (Members Association of Licensed Automobile Manufacturers) **Buffalo, N. Y.**

Owners of THE GEORGE N. PIERCE COMPANY

Vol. VI MAY, 1909 No. 5

AMERICAN HOMES AND GARDENS

$3.00 A YEAR MUNN & COMPANY, Publishers PRICE, 25 CENTS



HALL CLOCKS

Our line comprises the finest and most complete designs of high-class clocks on the market. Our movements are superior in nearly every detail and the purchaser is assured that he can buy the best by ordering a "Waltham."

We will soon have ready for delivery, our new Chiming Movement which chimes either Westminster, Whittington or St. Michaels.

Our "Willard" or Banjo Clock is a model of perfection and appeals to those who desire a first-class article in every respect.

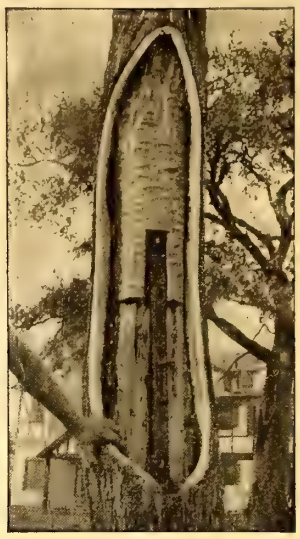
If your local dealer does not sell our line, send direct for illustrated catalogue.

Waltham Clock Company
Waltham, Mass.

Preserve Your Old Trees

They can never be replaced

Trimming Chaining Spraying Fertilization



Let Me Examine Your Trees

This examination is an assurance and is free for local territory. Our work is done by skilled workmen under the supervision of expert foremen. Our booklet is intended to show our methods—the pictures *what* we do, the references *how* we do it. Let our patrons speak as to the merit of our work.

A. A. Low, 31 Burling Slip, New York, February 10, 1909.

To whom it may Concern:—I have employed Mr. Clifford H. Easton, of 120 Broadway, New York, to care for my trees in the Adirondacks around my camp. I have always been satisfied with the work which he did, and with his intelligent treatment in handling difficult problems, which frequently develop. I very gladly recommend him to those looking for the services of a tree surgeon.—A. A. LOW.

C. H. EASTON, 120 Broadway, NEW YORK

Send for our Booklet, "The Preservation of Trees"

What Collier's Controls and What Collier's Offers Advertisers

IN *no other magazine* during 1909 will be found the Drawings of Charles Dana Gibson, Maxfield Parrish, and Frederic Remington, the Sherlock Holmes Stories of Conan Doyle, the Poems of Rudyard Kipling, the Commentary on Outdoor Life of Caspar Whitney. The work of these masters in widely separated fields will be read and enjoyed exclusively in the half-million families to which Collier's goes every week.

The story told in your advertisement goes to this same half-million families—families where good things in literature, art, and MERCHANDISE are appreciated to the point of possessing.

E. C. PATTERSON
Manager Advertising Department

NEW YORK CHICAGO BOSTON TORONTO

Cottage Designs

THESE books offer to architects, builders, homeseekers and investors by far the most complete collection of plans ever brought out, while the price is so low as to place them within the reach of all who have an interest in the building of homes. The designs are compiled with a view to representing all grades of cost, from the simplest types of cottages, as illustrated in the first series, to the comparatively elaborate structures reaching to $10,000 or more, in cost, treated in the fourth series, so that examples are given covering nearly every requirement, with respect to cost, in inexpensive homes.

No. 1. Cottage Designs with Constructive Details

A series of twenty-five designs of cottages, most of which have been erected, ranging in cost from $600 to $1,500; together with the details of interior and exterior finish, all drawn to convenient scale, and accompanied by brief specifications. Illustrated with 53 full-page plates of floor plans, elevations and details.

No. 2. Low Cost Houses with Constructive Details

Embracing upward of twenty-five selected designs of cottages originally costing from $750 to $2,500, accompanied with elevations, floor plans and details of construction, all drawn to scale, together with brief descriptions and, in many instances, full specifications and detailed estimates of cost. Illustrated by 61 full-page plates of floor plans, elevations and details.

No. 3. Modern Dwellings with Constructive Details

A selection of twenty designs of artistic suburban dwellings erected in various parts of the country, at costs ranging from $2,000 to $5,000; embracing floor plans, elevations and constructive details, showing interior and exterior finish, and drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions, from photographs of the completed structures, and 61 full-page plates of floor plans, elevations and details.

No. 4. Suburban Homes with Constructive Details

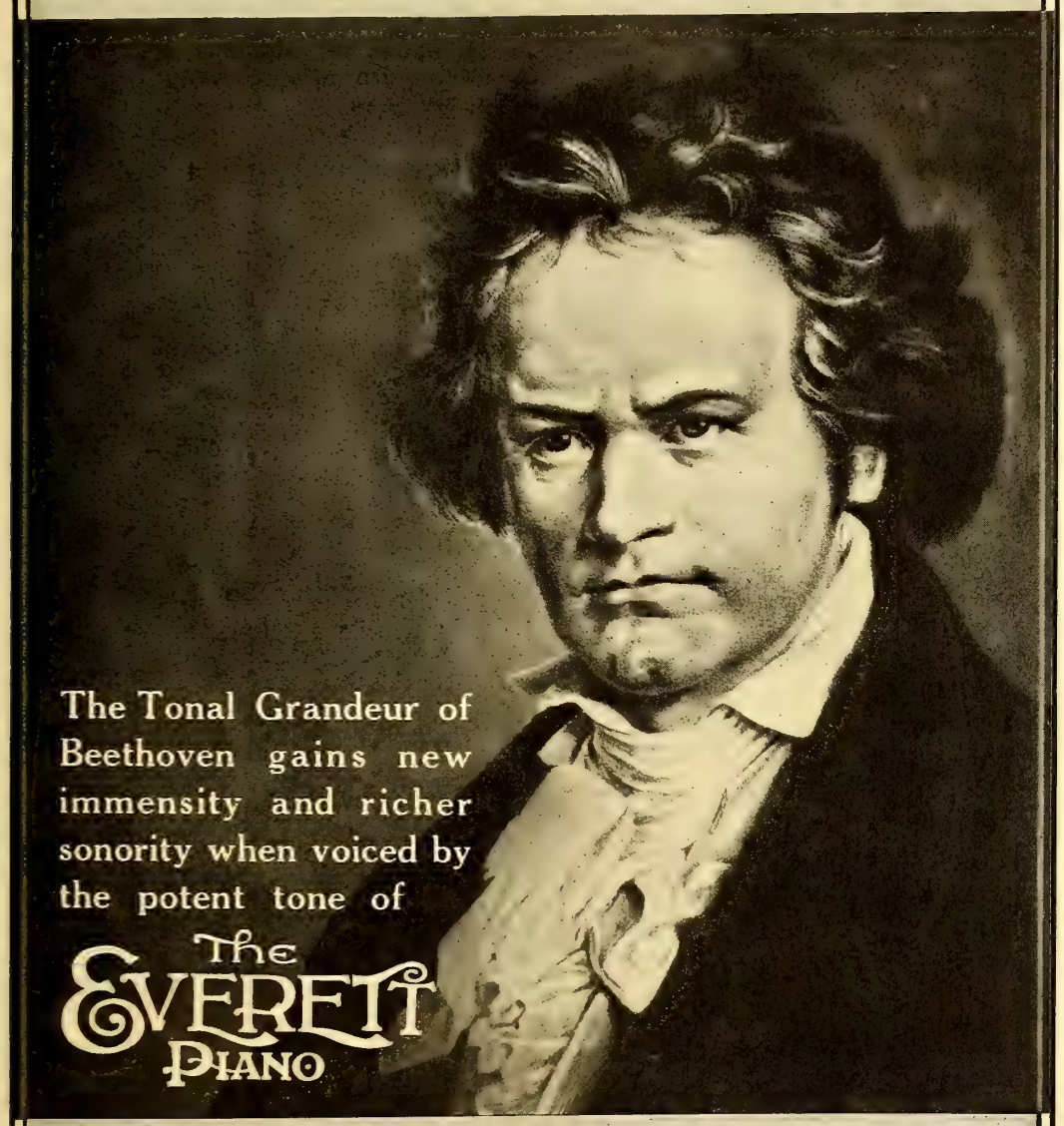
Comprising twenty selected designs of attractive suburban homes, ranging in cost from about $3,000 upward; embracing floor plans, elevations and constructive details, showing interior and exterior finish, all drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions from photographs of the completed structures, and 75 full page plates of plans, elevations and details.

ONE DOLLAR EACH, POSTPAID
(Sold Separately)

MUNN & CO. *Publishers of* SCIENTIFIC AMERICAN
Three-Sixty-One Broadway, New York

SMITHSONIAN 1985 LIBRARIES

To own an Everett is accepted among the World's greatest Artists as proof of best tone judgment.



The name "Everett" is synonym for "Best."

Uprights $500 to $675. Grands $725 to $1500. Special Art Cases to Order. Catalog Free

If your dealer does not sell the Everett, write us. We can make it easy for you to inspect the piano before purchase. We can also arrange purchase on convenient terms.

THE JOHN CHURCH COMPANY

Cincinnati Chicago New York

Owners of The Everett Piano Co., Boston, Mass.

IN some old cloister, in ages gone, may have been seen a simple lantern, in line and form similar to the one shown in the above illustration, the soft mellow light of which harmonizes readily with the decoration of any interior.

The ENOS COMPANY Makers of Lighting Fixtures

Office and Factory: 7th Av. and 16th St. NEW YORK Salesrooms: 5 West 39th St.

Boston: H. F. Esterbrook, Inc., 9 Park Street
Baltimore: 519 North Charles St.
Pittsburg: G. P. Norton Century Building
St. Louis: N. O. Nelson Mfg. Co.
Portland, Ore.: J. C. English Co., 128 Park St.
Chicago: W. K. Cowan & Co., 203 Michigan Blvd.
San Francisco: 1748 California St.
Toronto: 94 King St. West
Spokane: Cutter & Plummer, Inc.
Seattle: Cox & Gleason 1914 Second Ave.

W. G. ROBINSON, Architect, Grand Rapids

SUPERIORITY

is the keynote of success. Pure colors, ground in England, as fine as artist colors, combined with preserving oils, have made

DEXTER BROTHERS'

English Shingle Stains

SUPERIOR TO ALL OTHERS.

Send for samples.

DEXTER BROTHERS COMPANY

209 Broad Street, BOSTON

AGENTS: H. M. Hooker Co., 128 W. Washington St., Chicago; W. S. Hueston, 6 E. 30th St., New York; John D. S. Potts, 218 Race St., Philadelphia; W. W. Lawrence & Co., Pittsburg, Pa.; F. H. McDonald, 619 The Gilbert, Grand Rapids, Mich.; F. T. Crowe & Co., Seattle, Spokane, Tacoma, Wash., and Portland, Ore.; Klatt-Hirsch & Co., 113 Front St., San Francisco, Cal.

Sample and Circular Free.

A House Lined with

Mineral Wool

as shown in these sections, is ***Warm in Winter, Cool in Summer,*** and is thoroughly DEAFENED.

The lining is vermin-proof; neither rats, mice, nor insects can make their way through or live in it. MINERAL WOOL checks the spread of fire and keeps out dampness.

Correspondence Solicited.

U. S. Mineral Wool Co.

140 Cedar St., NEW YORK CITY.

JUST PUBLISHED

THIRD EDITION OF

KIDDER'S

Churches and Chapels

By F. E. KIDDER, Architect

This edition has been thoroughly revised by the author, and enlarged, many new designs being added, including several new designs for Catholic churches. There are 120 illustrations in the text and more than **50 full-page plates.** The book contains a large number of plans and perspectives of churches of varying costs. Besides this there is much concise and practical information relating to planning and seating; details of Construction, Heating and Ventilation, Acoustics, etc., making it in its present form

The Best American Book on Church Design and Construction

One oblong quarto volume. Price, net, $3.00

Munn & Co., 361 Broadway, New York City

BURLINGTON Venetian and Sliding BLINDS

Venetian Blind for inside window and outdoor veranda. Any wood; any finish to match trim.

SCREENS AND SCREEN DOORS

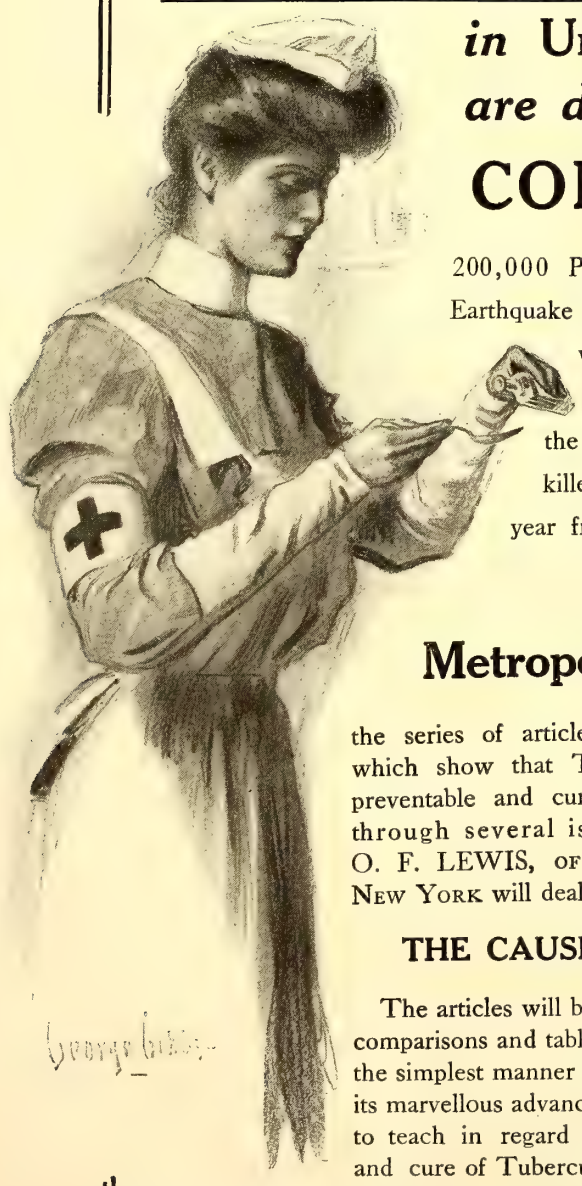
¶ Equal 500 miles northward. Perfect privacy with doors and windows open. Darkness and breezes in sleeping rooms.

Sliding Blinds for inside use. Require no pockets. Any wood; any finish.

WRITE FOR OUR CATALOGUE, PRICE-LIST AND PROPOSITION TO YOU

BURLINGTON VENETIAN BLIND CO., 975 Lake St., Burlington, Vermont

Eleven Per Cent *of the* Deaths *in* United States alone *are due to* CONSUMPTION



200,000 Persons were killed by the recent Earthquake in Italy, and the nations of the world are aroused to noble self-sacrifice in an endeavor to allay the sufferings. Yet fully as many are killed here in United States alone each year from Tuberculosis. Think of it!

Read in the

Metropolitan Magazine

the series of articles which has been prepared and which show that Tuberculosis is a communicable, preventable and curable disease. The series will run through several issues. The first, in APRIL, by O. F. LEWIS, OF THE CHARITY ORGANIZATION OF NEW YORK will deal with

THE CAUSES OF CONSUMPTION

The articles will be fully illustrated with striking charts, comparisons and tables, and will convey to the reader in the simplest manner all that modern medical science with its marvellous advancement of the past few years is able to teach in regard to the cause, prevention and cure of Tuberculosis.

CONSUMPTION CAN BE AVOIDED AND CURED

Place Your Order for the Entire Series at once.
The APRIL Issue will be quickly sold out.

THE METROPOLITAN MAGAZINE
3 WEST 29th STREET, NEW YORK CITY

Bungalows and American Homes

Design No. 2, Built in California and Iowa—Cost $2,200

Our handsome 100 page, 8x11 book of Bungalows, Mission, Colonial, English timbered and concrete houses for 1909 shows interiors, exteriors, and floor plans and actual cost to build. **Figures that you can rely upon.** These designs are photos of structures **we have built** in California and throughout the country—not theoretical pen pictures. Bungalows rent and sell at sight, and are an excellent investment. Price of book $1.00, P. O. or express order, prepaid. Sample folder free.

Brown Bros., Architects, 918 Security Bank Bldg., Cedar Rapids, Iowa

FLORENTINA ALBA "Orris Root" Add this delightful iris to your collection. ¶ As delicate and beautiful as an orchid, hardy as an oak. ¶ The cut flowers are very lasting, the roots dried have a delicate perfume. Plants, 50c. each; $5.00 per doz.

C. B. DeWEESE, Sidney, O.

BUYING FINE ORIENTAL RUGS

***right* is a solved problem; *proof*—**In March I sold an antique "Veritable Tekke" for $35; antique Bergama, $200; extremely rare undoctored Kerman, $155; antique glossy and thick Kazaks as low as $60; antique Belooch, $25; antique Saraband, $60; fine Tabriz, $85; antique Hamadan, $40; and rare antique carpets also at sane prices.

I could sell ordinary Bokharas, Kazaks, Shirvans, and others, from $15 to $25, but I do not carry doctored, nor shoddy stuff, nor other trash such as modern Oriental carpets.

I am a rug lover working for rug lovers; my monograph, "Fallacy and Fact," shows what I am doing for the "Square Deal" among them. To others it is 25c; to those in sympathy it is **free.**

MAJOR L. B. LAWTON, U. S. Army, Retired
135 Cayuga Street . . SENECA FALLS, N. Y.

Van Dorn Iron Works Co.

PRISON, HOUSE & STABLE WORK

JOIST HANGERS
LAWN FURNITURE
FENCING, ETC.

CLEVELAND, OHIO

GILSON GASOLINE ENGINE and PUMPING JACK

JACKS TO FIT ANY STYLE PUMP

$70.00 COMPLETE. COUNTRY HOMES supplied with our system always have water. Will run ice cream freezer, churn, washing machine, presses, meat cutter, dynamo, etc., etc.

SEND FOR CATALOG. ALL SIZES.

"Goes Like Sixty"

GILSON MFG. CO.
604 Park Street,
PORT WASHINGTON, WIS.

SPECIAL OFFER to Carpenters

BUILDERS AND OWNERS OF HOMES

IVES PATENT WINDOW VENTILATING LOCK. A Safeguard for Ventilating Rooms. Pure Air, Good Health and Rest Assured.

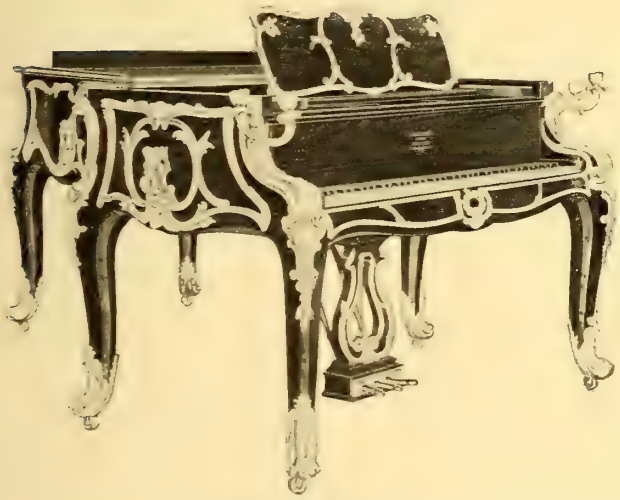
To introduce this article, Four Ventilating Locks in Genuine Bronze, Brass or Antique Copper Finish will be mailed to any address prepaid for One Dollar. Will include a forty page Hardware Catalogue and Working Model to carpenters who wish the agency to canvass for its sale. Address

The H. B. Ives Co. NEW HAVEN, Conn., U.S.A.

IN the designing and manufacture of Period and Art cases to harmonize with any plan of architecture or decoration, Steinway and Sons are the recognized leaders, as in all other departments of piano making—a distinction they have enjoyed for three generations. Every

STEINWAY
ART PIANO

is a true representation of its respective period—a veritable gem of beauty and perfection. A visit to the Steinway Studios will reveal that, in these masterpieces of pianocraft, music and decorative art are so deftly blended that they at once command the admiration and praise of architect, artist and connoisseur.



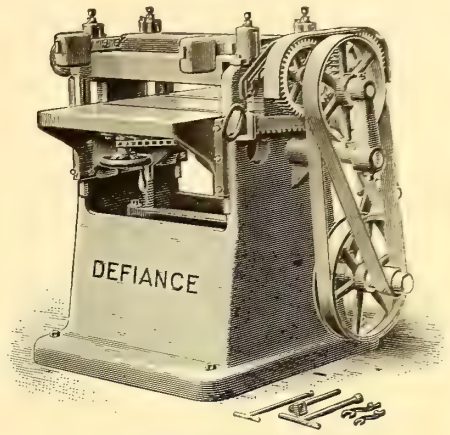
Steinway Parlor Grand Piano in the period of Louis XV, mahogany with ormolu mounts

STEINWAY & SONS,
Steinway Hall, 107-109 East 14th Street, New York
(Subway Express Station at the Door)

"DEFIANCE"
Wood-Working Machinery

For Pattern Shops and General Wood-Work

Invented & Built by
THE DEFIANCE MACHINE WORKS
DEFIANCE, OHIO



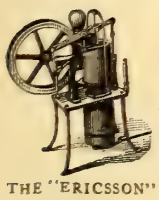
24-Inch Single Surface Planer

Garden Terra Cotta
Italian Flower Pots

THE GALLOWAY POTS have met the popular demand for an ornamental pot, having strength, durability and artistic design at a reasonable price. Made in three shapes and all sizes.

Our Booklet, "Terra Cotta and Pottery for Garden and Home," filled with beautiful designs of ***Pots, Vases, Sun Dials, Benches*** and other pieces of garden furniture, will be sent upon request.

William Galloway
3222 Walnut Street PHILADELPHIA


THE "ERICSSON"

Tested by Time

There is a large element of risk in the purchase of some articles; this applies to new inventions as well as to imitations of many which are well-known. The risk, of course, increases with the price, and too much care cannot be given to the selection of such articles as are intended for permanent use. This risk is eliminated when it is possible to purchase of firms whose reputation and goods have stood the *test of time;* for then the buyer merely looks for the firm name or trade-mark which protects him. It so happens that he is thus protected in the purchase of a

Hot-Air Pump

The cuts upon this page show two different styles of the Hot-Air Pump; the upper is called the "Ericsson," and the lower the "Rider." The motive power in each is identical; the "Rider" merely being of larger capacity. The world-wide popularity of these pumps and their adoption into every clime have naturally resulted in the appearance on the market of imitation pumps, not only inferior in construction and lacking in durability, but so named as to deceive the innocent purchaser. Complaints received from many, who have been thus imposed upon impel us to advise intending buyers to look carefully at the two cuts here shown.

They are facsimiles of the genuine. Be sure, also that the name-plate REECO-RIDER or REECO-ERICSSON appears upon the pump you purchase. When so situated that you cannot personally inspect the pump before ordering, write to our nearest office (see list below) for the name of a reputable dealer in your locality, who will sell you only the genuine pump. Over 40,000 are in use throughout the world to-day.

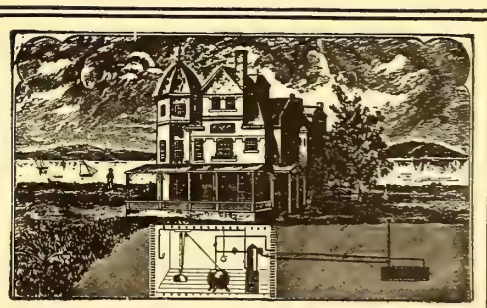
Write for Catalogue ***E****, and ask for reduced price-list.*

RIDER-ERICSSON ENGINE CO.

THE "RIDER"

(Also makers of the new
"Reeco"-Electric *Pump)*

35 Warren Street, - - - - New York
239 Franklin Street, - - - - Boston
40 Dearborn Street, - - - - Chicago
40 North 7th Street, - - - Philadelphia
234 Craig Street West, - - Montreal, P. Q.
22 Pitt Street, - - - Sydney, N. S. W.



THE **most modern,** and **best illuminating** and **cooking** service for isolated homes and institutions, is furnished by the **CLIMAX GAS MACHINE.**

Apparatus furnished on **TRIAL** under a **guarantee to be satisfactory** and in advance of all other methods.

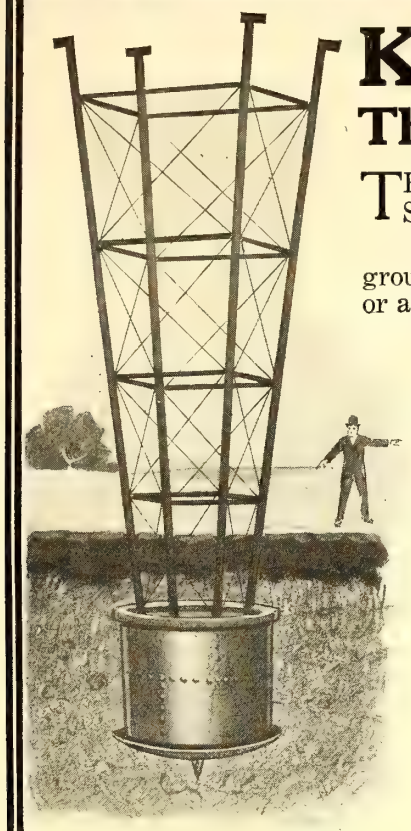
Cooks, heats water for bath and culinary purposes, heats individual rooms between seasons—drives pumping or power engine in most efficient and economical manner—also makes brilliant illumination. **IF MACHINE DOES NOT MEET YOUR EXPECTATIONS, FIRE IT BACK.**

Send for Catalogue and Proposition.

Low Price Better than City Gas or Electricity and at Less Cost.
Liberal Terms

C. M. KEMP MFG. CO.
405 to 413 E. Oliver Street, Baltimore, Md.

THE KEWANEE SYSTEM OF WATER SUPPLY



Keep The Tank
Throw Away the Tower

THAT'S what you do when you install a Kewanee System of Water Supply!

The Kewanee Pneumatic Tank is buried in the ground or located in the cellar—there is no elevated or attic tank to freeze, over-flow, leak or collapse—and the water is delivered by air pressure evenly and abundantly to all fixtures. Temperate in winter and cool in summer.

Every country or suburban home can be provided with all the sanitary conveniences and comforts of the best city water system with

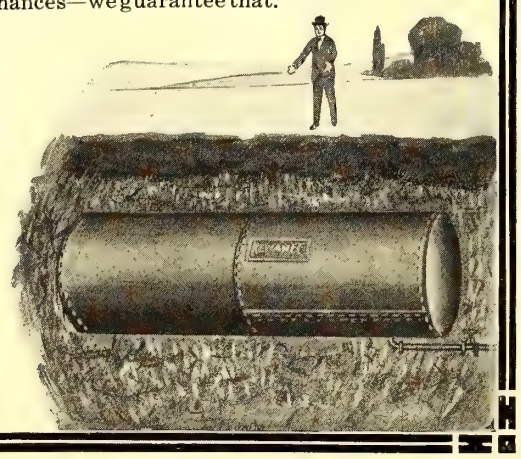
The Kewanee System of Water Supply

which ten years of practical experience and technical knowledge of trained experts has made the most perfect, the most practical of all water supply systems.

Over nine thousand Kewanee Systems in successful operation supplying water for country and suburban residences, clubs, farms, schools, public and private institutions, villages, etc. The Kewanee System is **not an imitation**—is **not a substitute.** It is the **original** water supply system involving the use of **air pressure** instead of gravity pressure. Avoid cheap imitations. Look for our trade mark and name plates on tanks and pumping machinery. Get the genuine and you will take no chances—we guarantee that.

Kewanee Pumping Outfits

Kewanee pumping outfits are furnished for any special pumping requirements. The same technical skill and practical knowledge required to develop and perfect complete Kewanee Systems, are devoted to the solution of individual pumping problems.



No charge for expert engineering service. Let us help you solve your water problem. Write for our 64-page illustrated catalogue No. 36. It is free.

Kewanee Water Supply Co., Kewanee, Ill.

1212 Marquette Building, Chicago, Ill.
1566 Hudson-Terminal Building, 50 Church Street, New York City.
305 Diamond Bank Building, Pittsburg, Pa.

ANY BEAM ABUTTING ITS SUPPORT IS BEST HELD ON OUR

JOIST HANGERS

Made in over 100 listed sizes and any modification to order.

LANE BROS. CO. (The Door Hanger Manufacturers) 434-466 PROSPECT ST. POUGHKEEPSIE, N. Y.

MAKING A COUNTRY HOME

By E. P. Powell

III. FRUITS FOR THE SMALL HOME ORCHARD

I PROMISED you an article on fruits for a small country home—such as any one going out from the city needs to create. I propose to suggest only those fruits that are most important in making a simple home delightful and healthful. I shall make my list to include varieties that I have myself tested for the most part, and to include very little that will require unusual knowledge or care. It is very desirable in these days to get lists of fruits that are not peculiarly subject to fungus diseases and to insect attacks. It is possible to plant a country home with sorts that will not survive under ordinary care, or give satisfactory results. I have seen one or two homesteads undertaken where the pears were those specially subject to blight, the apples those most surely assailed by insects, and so through the whole list. I will try to make my advice to plant cover only those things which my experience has taught me will be the least subject to our enemies.

The most popular fruit just now, and the one undergoing most evolution, is the plum; and I shall find it quite difficult to confine myself to a list of half a dozen. I think my best plan will be to give you six of the old European sorts, and then six of the products of Mr. Burbank's enterprise and skill. (1) At the head of the list should stand the old Green Gage, even yet the highest flavored of all plums. The tree is long lived, and bears immense crops, but it should stand out open to the sun in order to get perfect flavor. (2) For huge crops of really good cooking plums, also fairly good for dessert, the Lombard, or Bleecker, should stand second. The tree, however, is an irregular grower, subject to the black knot and suckers badly. I would not give it this rank only that it will grow anywhere and everywhere, and do its best in city back yards where it is pinched for room. (3) For superb growth and superb looking fruit the Pond might fairly take third rank. The tree is very healthy and stout and might be grown for its own sake. (4) Coes Goldendrop, for everybody's growing, can fairly take this place; only here we have once more a tree that suckers badly and is short lived. In all such cases you must keep on planting the suckers to make new trees—provided you have them on their own roots. (5) Reine Claude is a plum somewhat resembling Green Gage, but very much later and one of the most productive of all plums. The tree overbears, and it can not be said to be long lived. (6) Grand Duke must be the last in this list, and ripens late in September. I have left out Monarch, Archduke and Peter's Yellow Gage, which I wish very much you may find room for.

Now for these new Japanese plums, take (1) Shiro, a strong, early ripening variety giving you a load of light yellow plums, almost transparent and very good. (2) Burbank, one of the most astonishing affairs in the fruit world for the quantity it can bear. The tree is hardy and sprawls badly. I am not sure but that you had better take America or Abundance instead of Burbank. If not, take as (3) and (4) these two plums. Remember, however, that both of them must be picked as soon as they begin to color. Ripened on the tree they are nearly worthless. If ripened in a dark cool room the flavor becomes delicious and the fruit is not quick to decay. For (5) I should take Sultan. For eating, this plum, in my judgment, is the best of all that Mr. Burbank has produced. The flesh is dark red in color, and sufficiently

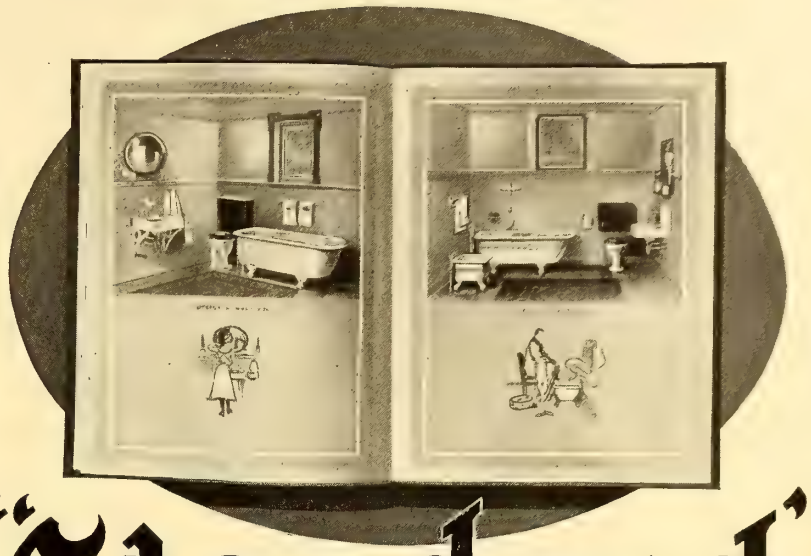
solid to endure carrying. I should like to add for (6) October Purple or Climax, both fine—but not Wickson and not Hale and not Satsuma, all of which have done very poorly with me.

For half a dozen pears, being a grower of fifty sorts, I am still a little undecided which to select. But it is plain that Bartlett must be (1). This pear has stood the test for two generations, and nothing has been able to elbow it from the farm. It is grand for canning and for every other purpose conceivable. Remember, however, that it must be picked before it is colored, and must be stored in a cool dark room to ripen. (2) Clapp's Favorite. This pear averages a little larger than Bartlett and is a delicious fruit, provided you pick it at least ten days before it is ripe—otherwise it is sure to rot at the core before it is usable. For (3) you can not do better than take Flemish Beauty, provided you can protect it from scab, by spraying. I promised, however, that my list should exclude very troublesome fruit, and this grand old pear is one of the worst. In its place take Sheldon, one of the plainest looking, but large and delicious pears, ever produced. The tree is not as long lived as some, but ranks well with the Bartlett. For (4) select Vermont Beauty, or you may take Bartlett Seckel. Both of these are crossbred pears of exceedingly high rank. The latter has a very strong tree, and the fruit is about half way between Bartlett and Seckel. For a quiet home a little round-headed Seckel should come as (5). It will stand most anywhere, and looks as well on the lawn as in the orchard. Pick them as soon as they begin to drop and store in a cool room. For (6) we shall have to take Anjou; all in all the grandest pear in existence, counting in the perfect growth of the tree, the huge crops, the melting and rich nature of the fruit, and the fact that it will keep until January in an ordinary cellar. Pick in October and store in shallow bins. Now I have left out Lawrence, because the tree is not long lived; Bosc because the tree is a wretched grower; and I have left out some other fine ones because you will not have room for them; but with those named you will have pears from early August until midwinter.

I confess that one of the hardest problems to solve is that of selecting half a dozen apples best suited for a quiet country home. There are some two thousand listed apples at present, and of these there are at least a good hundred that are strong applicants for favor. However, let us see what we can do with Yellow Transparent as (1), a most delightful apple, ripening about July 20th. It has but one rival that is worth mentioning, and I am afraid that Lieveland Raspberry will not be a universal success. For (2) we will have Red Astrachan, a good sized apple of extraordinary beauty, and the finest flavor for cooking and making jelly. The tree is hardy, bears only every other year, and the fruit is rather tart for dessert. About the last of August we shall find our (3) in the Chenango Strawberry or Sherwood's Favorite. This is the real summer Strawberry, although another apple of inferior quality bears that name. It is one of the most delicious that grows or ripens at any season. The tree is rather small and compact, and needs to be well trimmed to keep it from loading with insignificant fruit. It can be grown where you have only a small garden corner or lawn. I leave out Sweet Bough, that dear old apple of our boyhood, because it is so subject to all sorts of insects, and I make (4) Gravenstein, a large noble fruit; while for early winter I name as (5) McIntosh, and designate it as one of the finest apples in existence. It is a seedling of Fameuse, and utterly displaces that fine old apple. It is the equal in quality, but

Every Homebuilder should have a copy of

THIS BOOK



"Standard" Modern Bathrooms

If you are building a new home, or installing a new sanitary equipment in the old, you should have this book before you decide on the fixtures. You, as a layman, know little about the sanitary question. Yet home-sanitation and home-health are matters too vital to leave in any other hands than your own. This book contains to a detail just the kind of information every buyer of bathroom fixtures needs. No matter how much or how little your bathroom investment is to be, $50 or $500, this book shows you exactly how to get the best and most practical equipment at the price you want to pay. "MODERN BATHROOMS" is the most elaborate and most instructive book ever issued on the sanitary question. *Send for it now and read it.*

Please enclose 6c. postage and give us the name of your architect and plumber, if selected,

Standard Sanitary Mfg. Co. Dept. 23, Pittsburgh, Pa., U. S. A.

Offices and Showrooms, New York: 35-37 West 31st Street. Pittsburgh: 949 Pennsylvania Avenue. St. Louis: 100-102 North Fourth Street. Louisville: 325-329 West Main Street. Philadelphia: 1128 Walnut Street. New Orleans: Corner Baronne and St. Joseph Streets. Cleveland: 648-652 Huron Road, S. E. London, England: 22 Holborn Viaduct, E. C.

Beauty and Quality in Hardware Trimmings

Select the hardware that goes into your new home for its beauty, but also bear in mind that *quality* should be of equal importance in determining the choice.

Combine beauty and quality — artistic designs that tastefully harmonize with the architecture and of known durability — in one of the seventy styles of

SARGENT'S

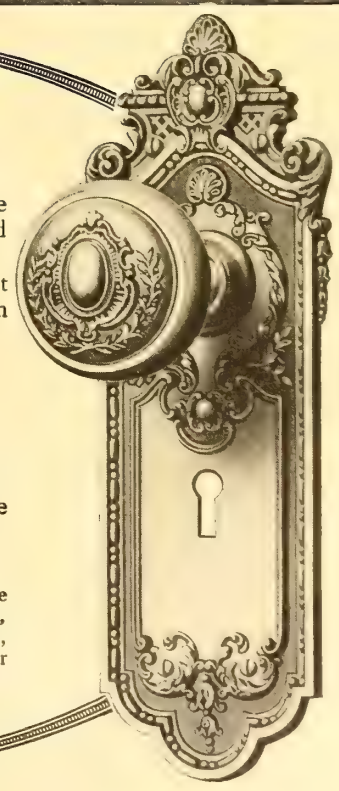
Artistic Hardware

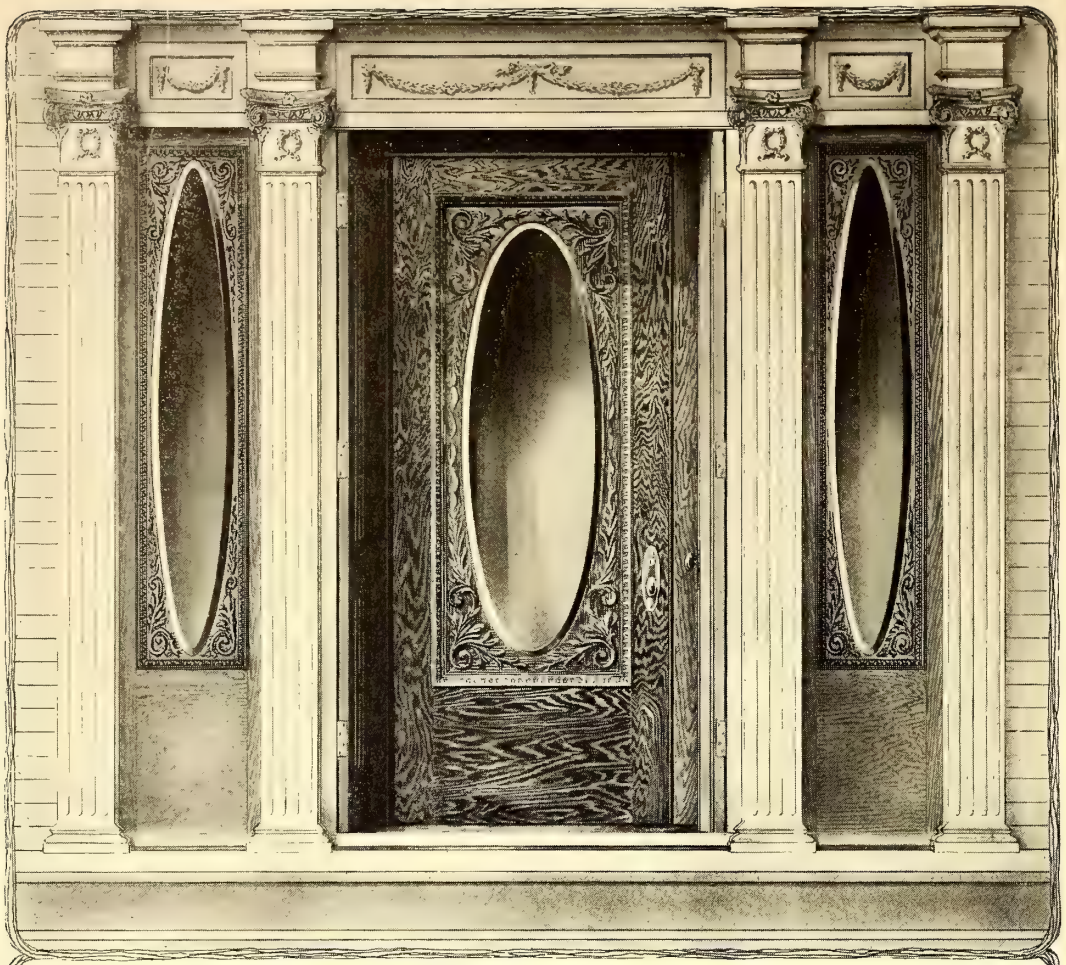
Each design, whether plain or elaborate, is distinctive and of real decorative value. All are illustrated in

Sargent's Book of Designs — FREE

Shows over seventy beautiful designs and is a guide to the selection of hardware. Free on request, also our *Colonial Book*, in which we illustrate Cut Glass Knobs, Front Door Handles, Door Knockers, and other fittings particularly appropriate for Colonial houses.

SARGENT & CO.,
156 Leonard St., New York.





The Colonial Entrance

The correct design, beautiful finish, and durable construction of the Morgan Colonial Door makes the Colonial entrance an artistic and practical success.

Cross section showing construction of 1⅜ inch door.

The name "*Morgan*" is branded on each door.

are perfect doors, built of several layers with the grain running crosswise, making shrinking, warping or swelling impossible. Veneered in all varieties of hard-wood—birch, plain or quarter-sawed red or white oak, brown ash, mahogany, etc.

Morgan Doors are light, remarkably strong and absolutely perfect in every detail of construction.

Each **Morgan Door** is stamped "*Morgan*" which guarantees quality, style, durability and satisfaction.

In our new book—"*The Door Beautiful*"—**Morgan Doors** are shown in their natural color and in all styles of architecture for interior or exterior use, and it is explained why they are the best and cheapest doors for permanent satisfaction in any building. A copy will be sent on request.

Architects: Descriptive details of Morgan Doors may be found in Sweet's index, pages 678 and 679.

Morgan Company, Dept. A, Oshkosh, Wisconsin.

Distributed by

Morgan Sash and Door Company, Chicago, Ill. **Morgan Company, Oshkosh, Wisconsin.** **Morgan Company, Baltimore, Maryland.**

FLOORENE FOR FLOORS

Soap, Scrubbing Brushes, Cleaning Compounds and Scrubbing may be entirely dispensed with, if you use FLOORENE on your floors. Send for our book "Beautiful Floors Simplified," free for the asking, explains conclusively and successfully The Floor Finish Problem.

DURENE FOR WOODWORK

DURENE, as its name implies, is the most durable, lasting, washable and brilliant wood finish on the market. Quality uppermost, excellent flowing properties, full body and wear-proof, can be rubbed and polished.

AMERICAN VARNISH CO.

VARNISH SPECIALISTS CHICAGO, U. S. A.

F. E. CARPENTER COMPANY

253 BROADWAY NEW YORK CITY

Manufacturers and erectors of

High-Grade Iron Railings and Wire

FENCES

of all kinds and for all purposes, solicit your correspondence. Catalogues furnished. Special designs at short notice.

Best Materials Best Workmanship Low Prices

Sheep Manure

Kiln dried and pulverized. No weeds or bad odors. Helps nature hustle. For garden, lawn, trees, shrubs, fruits and house plants.

$4.00 LARGE BARREL, Cash with Order. Delivered to your Freight Station.

Apply now.

The Pulverized Manure Co., 21 Union Stock Yards, Chicago.

PRICE, $8.00

CHINESE WICKER BASKET CHAIRS

Imported direct from *Hong Kong China.* Weather finished, strongly made, very artistic, just the chair for porch or den. *What you have always wanted but never knew where to obtain.* Sent direct upon receipt of price. Satisfaction guaranteed or money refunded. Reference German-American Savings Bank, Los Angeles.

HOMER G. HOWRY

Importer of Chinese Wicker Furniture

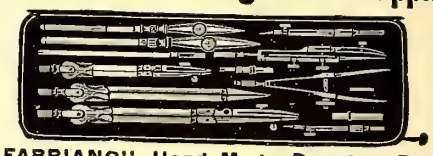
Broadway Central Bldg., Los Angeles, Cal.

St. Louis, Mo. Baltimore, Md.

F. Weber & Co.

1125 Chestnut St., Philadelphia, Pa.

Architects' and Engineers' Supplies

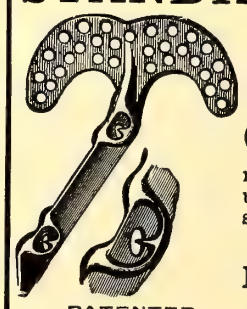


"FABRIANO" Hand-Made Drawing Papers

Superior to any other hand-made paper

F. Weber & Co.'s Illustration Boards, Air Brushes and Materials

STANDING SEAM ROOF IRONS



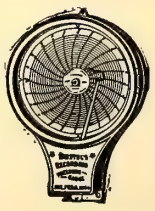
PATENTED

CLINCH right through the standing seam of metal roofs. No rails are needed unless desired. We make a similar one for slate roofs.

Send for Circular

Berger Bros. Co.

PHILADELPHIA



BRISTOL'S RECORDING THERMOMETERS

make continuous records of atmospheric temperatures, and are designed for both indoor and outdoor temperatures. Send for new catalogues.

THE BRISTOL COMPANY, WATERBURY, CONN.

NEW YORK *Branches* CHICAGO

For Five Dollars

American Homes and Gardens and Scientific American

SENT TO ONE ADDRESS FOR ONE YEAR

Regularly Six Dollars

larger and cleaner and keeps much longer. With Northern Spy as (6) we have our list completed, and the real king among apples named. I am sorry that we have to leave out Hubbardston Nonsuch, Rhode Island Greening and Spitzenburg. You can, however, graft these and two or three more into the limbs of those which you plant. One tree may easily bear two or three varieties to accommodate a small country home. Our list still leaves out a good half dozen that ought to find a place. Among these are Stayman's Winesap, the best of all the Winesaps; King David, which Stark Bros. pronounce the best of all apples; Delicious, another superb fruit from the same quarter; Winterstein, created by Burbank, and much like Gravenstein, only keeping all winter. For filling in between rows and for lawn growing, Wealthy is a compact little tree, and the fruit is about the cleanest and safest from worms of all fall varieties. I leave out Jonathan and Grimes Golden simply because they are not adapted to all sections, but do their best in sandy soil. For sweet apple take the old Pound Sweet, provided you can grow it in abundant sunshine. Two new sorts of splendid quality are Danchy and Sconondoah; while for Crab select Excelsior.

Cherries are not planted by any means as freely as they ought to be. They constitute a splendid home fruit, both for dessert and cooking. The trees are small and will grow well around the borders of the plantation. Nothing is more beautiful than a cherry tree, either in bloom or in fruit. Curculios do a little damage, but the birds are the chief hindrance. To cover a cherry tree with mosquito netting costs from one dollar to three dollars. The netting will last from three to four years, if carefully removed and stored after the cherries are picked. This covering will keep the birds off, and at the same time the fruit can hang on the trees until dead ripe. A dead-ripe cherry is seldom seen in market. You can divide the sorts into two classes, the sour cherries and the sweet cherries. Of the sour varieties there are twenty or more sorts, and every one of them fairly good. The earliest is Early Richmond, and this is a clean growing, productive sort, but the fruit is rather small and sour. I should select Olivet, Montmorency, May Duke, Baldwin and Wragg, with perhaps the old English sort Morello. Suda Hardy is another splendid variety. Of the sweet sorts Gov. Wood is about the best in quality, most productive and vigorous in growth. Black Tartarian is another vigorous grower and bears immensely a black cherry. Napoleon and Rockport are both superb varieties. Allen is a new sort, with meaty and rich fruit, and ripens late. After this comes Dikeman, another new sort of splendid quality and very hardy. I am growing a few of the Russian sorts, and find them all good, but not superior to those named. I have not tried Mercer, but this new kind is very surely a splendid addition to our list.

Another fruit that every garden should hold more freely is the quince. The tree is generally hardy, and the fruit buds endure zero weather. Plant the quince behind hedges and out of reach of the winter sun. The old orange quince is the one most generally seen, but I am planting both here and in Florida Meech's Prolific, an early quince; and for late keeping the Champion. Then I would add Bourgeat, a new quince of the best quality; very large and said to be entirely free from blight. It bears as high as two or three bushels to a tree. The quince goes so far in matters of housekeeping that I would have a few bushels anyhow. I have seen them planted in the shrubbery as ornamentals,

Vudor Porch Shades

THE comfort and seclusion afforded by Vudor Porch Shades make the porch a delightful outdoor room—airy and breeze-open, but protected from the sun's rays and from the observation of passers by.

Vudor Porch Shades are made of wide strips of linden wood firmly bound with strong seine twine. They can be seen through from the inside, but not from the outside. They are artistically stained with weather-proof colors in greens and browns and are in keeping with the finest residence. They last for years. Therefore Vudor Porch Shades must not be confused with the flimsy, ragged and cheap looking bamboo or imported screens. Look for the Vudor name-plate as shown above. Vudor Porch Shades come in various widths and are inexpensive; single shades cost from $2.25 up, according to width, and an ordinary porch can be completely equipped for $5. to $10.

Write for Booklet and Name of Your Local Dealer

We will send you free upon receipt of a postal card request, the beautiful Vudor booklet fully describing and illustrating in actual color Vudor Porch Shades and Vudor Re-enforced Hammocks. With the booklet we will send you name of local dealer in your town who sells our goods. Write to-day.

HOUGH SHADE CORPORATION, 240 Mill St., JANESVILLE, WISCONSIN

The background of this advertisement shows section of a Vudor Porch Shade, actual size

Enametile
THE NEW TILE

Admirable for Bathrooms, Halls, Vestibules

Enametile is an enameled, embossed, flexible metal covering for walls, ceilings and wainscoting. Made in a great variety of artistic designs and colors, to represent the finest ceramic tiling.

Cheaper, Lighter and more Sanitary than Ceramic Tiling

Enametile costs *only* one-half to one-sixth as much as ceramic tiling; may be kept clean with soap and lukewarm water; is hygienic, dust-proof, vermin-proof, and at the same time is *artistic* in design. Easily and quickly installed.

BEAUTIFUL, ECONOMICAL AND DURABLE

Send for **Handsome Art Portfolio** free, showing many of the beautiful designs of Enametile in original colors. You owe it to yourself to investigate Enametile. Plans, estimates supplied you direct, your contractor, or your architect.

NEW YORK METAL CEILING CO., Sole Manufacturers

Makers of **Metal Ceilings** for residences, business and public buildings. Catalogue sent free.

544 West 24th Street, NEW YORK

AERMOTOR PUMPING DEVICES

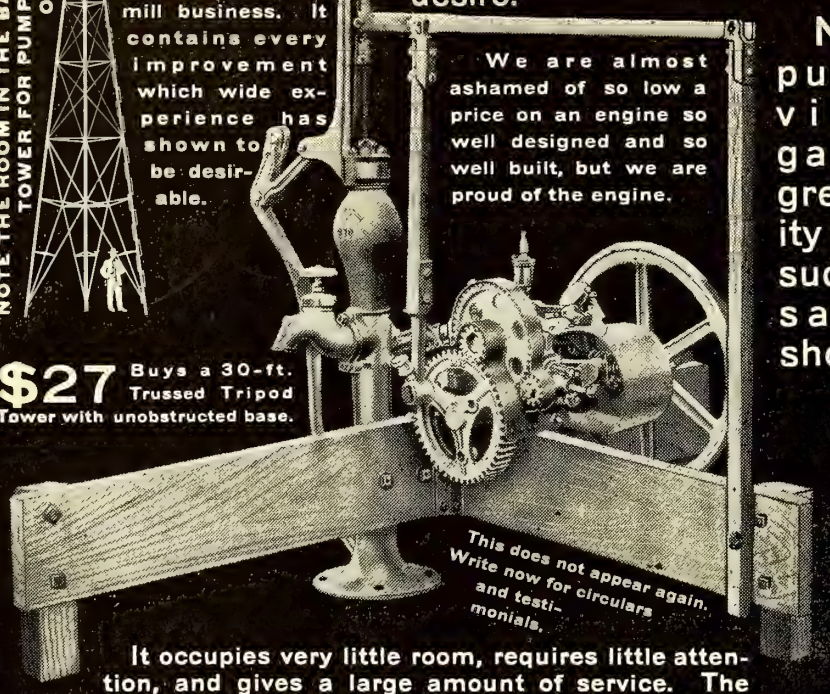
Are known and used the world over. Hundreds of thousands of AERMOTORS in use. Thousands of GASOLINE PUMPS in use.

$25 Buys an 8-ft. Aermotor. This is the galvanized-after-completion steel Aermotor which revolutionized the windmill business. It contains every improvement which wide experience has shown to be desirable.

$27 Buys a 30-ft. Trussed Tripod Tower with unobstructed base.

The Aermotor Gasoline Pump is easily attached to "any old pump" in 30 minutes. The engine and pumping gears are assembled in one simple, compact and durable machine which is complete in every detail and ready to set up and go to work. It will pump as much water as an 8-ft. windmill and will run as many hours a day as you desire.

We are almost ashamed of so low a price on an engine so well designed and so well built, but we are proud of the engine.



This does not appear again. Write now for circulars and testimonials.

It occupies very little room, requires little attention, and gives a large amount of service. The supporting frame is clamped to the pump standard, making a very solid and compact arrangement.

No other pumping device ever gained such great popularity or reached such great sales in so short a time

You can afford to have one of these on every well.

We make so many of these engines that we have put in the facilities for building them perfectly.

PRICE **$37 1/2**

For engine complete with walking-beam and supporting frame.

These attachments have been devised to provide the easiest, quickest and most substantial way for connecting to any style of pump which is already in the well. Everything is supplied for setting up complete as shown, except the stakes.

AERMOTOR CO., Campbell Avenue and 12th Street, CHICAGO

SANITAS

THE WASHABLE WALL COVERING

For Your Reception Hall or Foyer

A SIMPLE way of introducing beautiful, economical Sanitas into your home is to begin by redecorating your hall this spring with one of the new superb patterns.

You will then appreciate through actual experience the decorative beauty of dull finished Sanitas unequalled by any other material, and what it means to have a wall covering that is proof against fading, cracking, staining or tearing—that is instantly cleaned as bright as new with a damp cloth.

Write to our Special Department of Home Decoration. Describe each room you desire to decorate and receive free samples with sketches of clever new interior effects. Write today.

MERITAS STANDARD OIL CLOTH COMPANY — *When you buy Table Oil Cloth ask for "Meritas"—guaranteed perfect. Trade-marked, every yard on the back.*

THE STANDARD OIL CLOTH COMPANY
Dept. 11, 320 Broadway
NEW YORK CITY

SHETLAND PONIES

An unceasing source of pleasure and robust health to children; safe; inexpensive to keep; many champions; stallions and mares for breeding; complete outfits; our beautifully illustrated free catalog tells all about them.

BELLE MEADE FARM
Dept. W. BEDFORD, MASS.

Take off your Hat to the YERS

Write for Circulars and Prices to F.E. Myers & Bro. Ashland, Ohio

THE PUMP THAT PUMPS | HAY TOOLS — BARN DOOR HANGERS, HAY RACK CLAMPS

FINE HARDWOOD FLOORS

Most economical, healthful and satisfactory—for old or new houses, different patterns to match furnishings. Outwear carpets. Stocks carried in the leading cities. PLAIN OR ORNAMENTAL. THICK OR THIN.

Write for PATTERN CATALOGUE

THE INTERIOR HARDWOOD CO. MFTRS. INDIANAPOLIS

Squier's Weed Killer

For Exterminating all Vegetation upon Drives, Paths, etc. For Exterminating all Obnoxious Vegetation Anywhere.

Very economical to use. Write for circulars giving prices and testimonials.

G. HARRISON MFG. CO., Rahway, N. J.

FENCE For lawns, divisions, schools, cemeteries, etc. Write us your needs, asking for Booklet F.

Best goods. Lowest prices. Satisfaction guaranteed
Brook & Seaman, 253 Broadway, New York City

SAVES AUTO WEAR

Give your automobile engine perfect lubrication, save money, wear and trouble with **Vacuum Mobiloil** made in different grades for different engines. Booklet showing right grade for **your** engine, free.

VACUUM OIL CO., Rochester, N. Y.

and I have seen them thrive admirably in a house corner, close to the wall.

I have long made it a practise to grow peach trees, although I get fruit about one year out of five. In Florida, of course, it is our hobby, and stands beside the orange as the best of our market fruits. Here in the North it has its sections, but in Central New York and the New England States we can not make sure of it, not even in Connecticut. As far north as I am living it pays to grow a few trees, provided we can keep the winter sun from them, so as not to soften the buds. The tree is generally hardy, and we lose only the fruit buds. I should plant first of all, for hardiness, the Crosby. The fruit is fairly good, and I get more or less of it nearly every year. Ranking close after this I should place Champion, a large white peach with a red cheek, and I think the best peach I have ever sampled. Triumph is a very early peach, quite hardy, yellow fleshed and of superb flavor. Then I would rank close after this Belle of Georgia, a sugary peach and most delicious. It is a hardy tree and very productive. Niagara deserves the next place for hardiness, vigor and productiveness. Stevens' Rareripe might fairly make the sixth, being a very fine, free stone, white peach, and ripening as late as October. This leaves out two new peaches that I should like to name, the Matthews Beauty and Lamont, both magnificent fruits and very hardy. I believe, however, that Stark Bros., of Missouri, have in their long list of new sorts something that is going to prove even more hardy for our Northern States. I am testing from them, Wright, and several more.

Apricots and nectarines are out of the question for the present, yet you can grow the apricots, and it will be good fruit for you to experiment with after your place has become well established.

We will consider grapes in another article with the berries. For the present you are well equipped for a snug home orchard and fruit garden. You will get fruit from your cherries and plums in two years, from your apples and pears in about four years—provided you head your trees low. This is a prime requisite in planting all fruits, in order to get early bearing. Head an apple tree down to about three feet from the ground, and you will get fruit four years quicker than you will by heading it up to seven feet. Give your apple and pear orchard a southern exposure, or an eastern. Let your hens run in it, and after it is old and trimmed up use it for a sheep pasture. The sheep, and to some degree the hens, will devour the worms and moths. If you grow peaches give them a northern exposure, because the winter sun splits the bark; and the same is true of sweet cherries. Plant your plums in a yard with chickens, while your cherry trees will make a very good appearance if planted clear around your acres. While all trees must be fed, be sure you do not put any manure near the roots, but dress the surface with rich compost. If you are too reckless to keep the suckers out of the trees, don't plant trees. Suckers or shoots should be removed every month. The apple enemy requires spraying with arsenites; the pear requires more care about fungus, and must be sprayed with Bordeaux. This should be done once before blossoming and once after the blossoms have fallen. The plum enemy is the curculio, which must be caught by jarring the tree over sheets. Use a padded pole, then catch the beetles and kill them quickly.

Where room allows, and you surely can find room on a place of three or four acres, you should plant a few trees specifically to

(*Continued on page xxiv*)

CREX
Grass Carpets and Rugs
TRADE MARK

It does not matter which floor you are going to cover, whether bedroom, dining-room, library, parlor, or hall,

CREX is the floor covering you need

You need CREX for the following reasons.
It is absolutely sanitary.
It is suitable for any surroundings.
It maintains cleanliness and promotes health.
It is the most economical because it is pratically indestructible.
It greatly reduces the labor of the housekeeper.

As a floor covering for summer cottages or porches CREX has no equal

CAUTION: Avoid imitations. The genuine bears the CREX label
Sold by all Up-to-Date Carpet and Department Stores.
Send for Booklet H. Beautifully Illustrated.
CREX CARPET COMPANY, 377 Broadway, New York

Give That Table a Modern Finish

AT slight expense—less than a dollar perhaps—you can produce any desired effect in woodwork. You can make all woodwork and furniture harmonize.

There is no guess work. The results you know beforehand. Choose the shade of Johnson's Wood Dye you want. Apply it. It dries in twenty minutes.

Then apply Johnson's Prepared Wax, which gives a permanent, subdued, rich finish which will not show marks or scratches.

Do not confound Johnson's Wood Dye with the varnish stains which merely give a coating to the wood, hiding its natural beauty.

JOHNSON'S
ARTISTIC WOOD FINISHES
JOHNSON'S

"The Wood Finishing Authorities"

Johnson's Wood Dye and Johnson's Prepared Wax are for sale in convenient packages by high class paint dealers everywhere. In their use you benefit by our years of experience.

In Johnson's Wood Dye you have 14 shades to choose from:

No. 126 Light Oak
No. 123 Dark Oak
No. 125 Mission Oak
No. 140 Manilla Oak
No. 110 Bog Oak
No. 128 Light Mahogany
No. 129 Dark Mahogany
No. 130 Weathered Oak
No. 131 Brown Weathered Oak
No. 132 Green Weathered Oak
No. 121 Moss Green
No. 122 Forest Green
No 172 Flemish Oak
No. 178 Brown Flemish Oak

Half-pints 30c; pints 50c. Johnson's Prepared Wax 10c and 25c packages. Also sold in large sizes. For sale by leading paint dealers.

Illustrated Book Free—Edition AH-5. Two Sample Bottles Johnson's Wood Dye and One Sample Can Johnson's Prepared Wax—Free.

Send coupon from this advertisement and we will send you free, prepaid, two sample bottles of Johnson's Wood Dye—select your own shades from list above—one sample can of Johnson's Prepared Wax and our illustrated guide book for Home Beautifying which includes complete color card and tells how to finish and refinish wood.

We want to give you these three packages at once. Send ten cents to partially pay cost of packing and postage—using coupon below for your convenience. Address

S. C. JOHNSON & SON
Racine, Wis.

Please Use This FREE COUPON

I accept your offer and enclose ten cents to partially pay postage and packing on Free Booklet Edition AH-5, one sample bottle of Johnson's Wood Dye, shade No..... one bottle of Johnson's Electric Solvo, and a sample of Johnson's Prepared Wax.

Name .....
Address .....
I usually buy my paint at store of
Name .....
Address .....

ATLAS PORTLAND CEMENT

NONE JUST AS GOOD

Houses of Stucco Over Blocks, or Tile

IF blocks or tile are used in building a house, they should be *concrete* blocks or *concrete* tile.

Then you have the *same material* throughout where expansion and contraction from heat or cold is equal, and the possibility of danger avoided.

Stucco over concrete blocks or concrete tile makes a durable, dry, fireproof house that requires no paint and no repairs, that is warm in winter and cool in summer.

Stucco, concrete blocks and concrete tile made with

ATLAS PORTLAND CEMENT

will give the greatest amount of satisfaction, because Atlas Portland Cement is the standard brand—always pure, always uniform and always in one grade—the same for everybody. The U.S. Government has purchased 4,500,000 barrels of Atlas for use in building the Panama Canal, the largest order for cement ever placed.

Write for these booklets:

"Concrete Country Residences" (delivery charges 25 cents).

"Concrete Cottages" (sent free).

"Concrete Construction About the Home and on the Farm" (sent free).

"Reinforced Concrete in Factory Construction" (delivery charges 10 cents).

If your dealer cannot supply you with "Atlas" write to

THE ATLAS PORTLAND CEMENT CO., Dept. 10. 30 BROAD ST., NEW YORK LARGEST CAPACITY OF ANY CEMENT COMPANY IN THE WORLD—OVER 40,000 BARRELS PER DAY

American Homes and Gardens for June

"Braemar"

"Braemar," the charming home of Mrs. M. Rumsey Miller at Tarrytown, N. Y., is charmingly described by Barr Ferree in his series of "Notable Homes." It is a quiet, restful house, environed in beautiful grounds, a house modest in size and designed in an extremely beautiful, yet simple manner by Peabody & Stearns, the well-known architects of Boston. The house is illustrated within and without, and is a strong feature of a strong number.

The Begonia

Eben B. Rexford contributes a chatty paper on the Begonia, and accompanies his article with a number of beautiful photographs of typical varieties. Few house plants are as decorative as the Begonia, and Mr. Rexford is thoroughly at home in describing these fine plants and telling his readers how to bring them to maturity.

A Group of Inexpensive Houses

Francis Durando Nichols has a suggestive paper on inexpensive houses, choosing as his theme some typical examples from the new suburb of Brooklyn known as Forest Hills. Some half dozen houses are briefly described and illustrated with views and plans. The article abounds with practical suggestions for those seeking good homes at moderate cost.

A Double Page of Small Houses

Two pages are used in presenting a group of sixteen small houses of varied design and style of architecture, and of modest cost.

Wall Gardens

S. L. Bastin describes, at some length, the method of building and treating of wall gardens. Handsome photographs illustrate some very excellent wall gardens.

A Summer Home on Long Island

The summer home of Mr. Arthur W. Hall, at Crystal Brook, Long Island, is completely described and illustrated in an interesting article by Bessie P. Lee. It is a charming shingled house, designed and developed with great originality. The illustrations not only include both interior and exterior views, but the floor plans as well.

What Can be Made in a Handloom

Mabel Tuke Priestman contributes a suggestive article describing home work in the handloom, which will be found full of interest to the home worker. Mrs. Priestman not only describes what can be done with the handloom, but illustrates her article with numerous examples of work actually performed with it.

A House with a Guaranteed Cost

This is an entirely new feature for the magazine, and is the most important novelty that has been introduced into our pages for some time. It describes and illustrates a house expressly designed for AMERICAN HOMES AND GARDENS, for which the publishers have the written guarantee of a reputable firm of builders undertaking to erect this dwelling, within sixty miles of New York, for the sum of $5,400. The house is interesting in design, has been well planned, and the description shows that it is provided with all modern conveniences and comforts. It is a new and distinct departure and is certain to attract wide attention.

The Warner House at Portsmouth

This fine old Colonial mansion at Portsmouth, N. H., is adequately described by Mary H. Northend, and is beautifully illustrated with numerous photographs taken expressly for the magazine. It is a house rich in historic memories, and is a fine example of the best Colonial work.

A House at Short Hills, New Jersey

The interesting residence of Mr. Charles W. Roche, at Brantwood Park, Short Hills, N. J., is fully described and illustrated by Charles Chauncey. It is an interesting type of house and offers many practical suggestions of helpfulness and utility.

A Country Seat at Lexington, Massachusetts

The Country Seat of Mr. Richard G. Tower, at Lexington, Mass., is described and illustrated by Paul Thurston. "Homewood," as the estate is called, is a typical Massachusetts country estate, which is now first adequately described, with many photographs and plans.

A Remodeled Barn

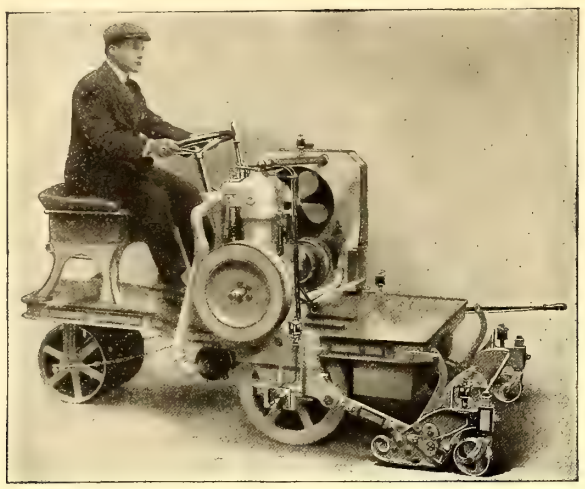
An old barn, remodelled and converted into a dwelling house, is the novel theme of an interesting article by Edith S. Welch. And a vastly interesting home has been made of it, too, with some highly original decorative effects, as the photographs fully show.

The Departments

The usual departments are filled with helpful and suggestive material. The editorial discussion in the "Monthly Comment" deals in a practical way with a subject of vital interest to every home owner. Alice Kellogg's "Correspondence" is, as usual, full of interesting suggestions, and Charles D. Lay's notes on horticulture, on plants and grounds are helpful and timely.

Coldwell Lawn Mowers

Hand, Horse and Motor Power



are used by the New York City Park Department, the Capitol at Washington, and by many leading golf and country clubs and large estates of America

EXCLUSIVELY

Send for Catalogue

Coldwell Lawn Mower Company

20 Coldwell Street NEWBURGH, N. Y.

BOBBINK & ATKINS'

World's Choicest Nursery Products

We have growing in our 160 acre Nursery all the products enumerated below and thousands of varieties listed and described in our beautifully illustrated general catalog. If you cannot visit our Nurseries to make your selection, please mail us your order, which will receive our careful and prompt attention. We guarantee satisfaction.

TRAINED AND DWARF FRUIT TREES
We have a complete assortment of these popular and profitable trees.

PINES
We grow many thousands in all the most useful and striking kinds. No grounds are complete without a proper number of them, as they are healthful and add attractiveness to the landscape.

EVERGREENS AND CONIFERS
Many acres of our Nursery are planted with the most attractive specimens ever produced in this country. Our collection has been admired by visitors from all parts of the world.

ROSES
We have many thousands of two year old plants ready for shipment, consisting of all the most suitable for the American climate.

OLD FASHIONED FLOWERS
For old fashioned gardens, beds and borders. Many acres of our Nursery are planted with the most complete collection in this country. Thousands of people visit our Nursery annually to see them when in bloom.

FRUITS
We can supply fruit trees to make a complete fruit garden. In addition, we have a fine selection of all kinds of small fruits, strawberries, etc.

RHODODENDRONS
Are among our specialties. Everybody intending to plant should certainly see our stock. We can give prices on large or small quantities in all the hardiest and most attractive varieties.

BOXWOOD
Our stock is probably unsurpassed, as we have thousands in all sizes, suitable for boxwood gardens.

TREES AND FLOWERING SHRUBS
Our trees and shrubs are hardy, vigorous and free from disease.

BAY TREES
The largest collection in this country in all sizes can now be seen in our storehouses.

VINES AND CLIMBERS
We have large quantities for every style of covering.

HEDGE PLANTS
We grow thousands for any kind of hedge desired.

TUBS
We make them in all sizes and shapes for plants and trees.

Our nursery products will give permanent satisfaction to purchasers, because they possess the standard of quality created by the highest grade of cultivation. Our **Illustrated General Catalog No. 90** will be mailed to prospective purchasers.

VISIT OUR NURSERIES

Nurserymen and Florists **Rutherford, N. J.**

Inexpensive Country Homes

A Practical Book for *A*rchitects, Builders, and Those Intending to Build

A HANDSOME CLOTH-BOUND PORTFOLIO, consisting of 88 pages, about 11x14, printed on heavy plate paper, and containing 43 designs, with floor plans of practical, tasteful and comfortable country homes, ranging in cost from $1,000 to $5,000 complete. The designs have been carefully selected, as embodying the best efforts of various architects throughout the country. Every one of the houses has already been built, and all of the illustrations are half-tone engravings, made direct from photographs of the completed structures, taken specially by the SCIENTIFIC AMERICAN artists. In many cases two perspective views of the same house are shown. Several illustrations of inexpensive stables are also included among the designs.

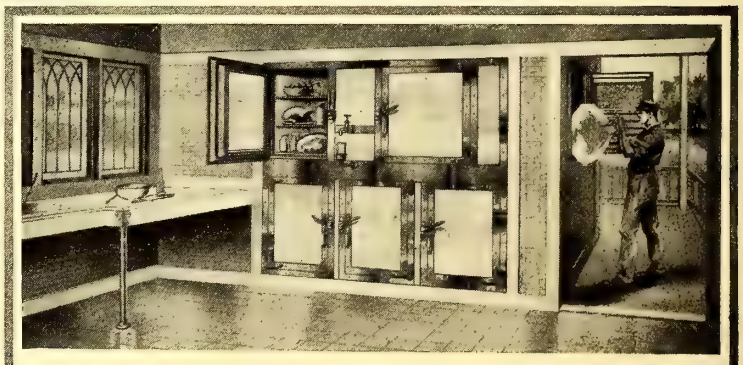
¶ The location of the dwellings, the cost, owners' and architects' names and addresses are given, together with a description of the dwelling, thus enabling, if desired, a personal inspection of the dwelling or direct correspondence with the architect or the owner.

ARCHITECTS, BUILDERS, AND THOSE INTENDING TO BUILD

will find many new and valuable suggestions among the up-to-date designs illustrated in this handsome portfolio.

PRICE $2.00 POSTPAID

MUNN & CO., 361 Broadway, New York



Keep the Ice-man Outside

Do away with the troublesome work of cleaning up after the ice-man by installing a McCray Refrigerator arranged for outside icing.

Drop us a line telling us where your present refrigerator stands and we will prepare, without charge, plans and estimates on a McCray **Built-to-order** Refrigerator, or if your requirements are normal, we will tell which of our **regular sizes** is best adapted to your needs.

McCRAY REFRIGERATORS
(Keep things fresh)

because the air in them is **purified** by constantly recurring contact with the ice, caused by the "**McCray System.**" This also **dries** the air so that even matches or salt can be kept perfectly dry in this refrigerator.

Your choice of sanitary linings: **Opal-Glass**, (looks like white china—½ in. thick) **porcelain-tile, white enameled wood or odorless white wood.** No zinc is ever used, as zinc forms dangerous oxides that poison milk and other food. Can be arranged for icing from an outside porch if desired.

Cut Down Your Ice Bills

McCray Refrigerators use less ice than other refrigerators, because McCray walls are the thickest and best "heat and cold proof" walls made.
McCray Refrigerators of all sizes and styles are ready for immediate shipment. Built-to-order Refrigerators for any purpose can be shipped three weeks after order is received. Every McCray is guaranteed to give lasting satisfaction. Upon request we will send you one of our illustrated books which explains why McCray Refrigerators are better than other refrigerators and **different** from ordinary ice boxes. Write a postal for catalog while you think of it.

No. A. H.—Built-to-order for Residences.
No. 66.—For Grocery Stores.
No. 58.—For Meat Markets.
No. 85.—Regular size for Residences.
No. 47.—For Hotels, Clubs, Institutions, etc.
No. 71.—For Florists.

McCray Refrigerator Co., 887 Mill Street, Kendallville, Ind.

AMERICAN HOMES AND GARDENS

Price, 25 Cents. $3.00 a Year

CONTENTS FOR MAY, 1909

PAGE

"Fernbrook": The Drive to the House and the Entrance Porch 174
The Garden in Your Town—Prize Competition 176
Homes of American Artists—"Fernbrook," the Summer Home of Thomas Shields Clarke, Lenox, Massachusetts ..... *By Barr Ferree* 177
Practical Suggestions for Domestic Ventilation ..... *By Thaleon Blake, C.E.* 183
A Small Brick House at Concord, Massachusetts ..... *By Charles Chauncey* 186
Flower-Box Beauty ..... *By F. Maude Smith* 188
The Porch Sitting-Room ..... *By Ralph de Martin* 191
Creating a Small Country Home ..... *By E. P. Powell* 194
Historic Mansions of the Rappahannock River—"Sabine Hall," one of the famous Carter Homesteads in Virginia ..... *By Edith Dabney* 197
Watercress Culture in France ..... *By Jacques Boyer* 201
A House Built for J. L. Johnson, Esq., at Hackensack, New Jersey. ..... *By Paul Thurston* 204
Ants and Bees as Pets ..... *By Percy Collins* 206
"Penllyn House," the Residence of Arthur King Wood, Esq., Ardsley-on-Hudson, New York ..... *By Francis Durando Nichols* 209
Garden Notes—The Best Twenty Annuals for the Flower Garden 212
Correspondence:
Problems in Home Furnishing ..... *By Alice M. Kellogg* xiii
Garden Work About the Home ..... *By Charles Downing Lay* xiii

Making of a Country Home: III. Fruits for the Small Home Orchard.
The Water Supply of the Country Home.
The Hen House. New Books.

Combined Rate for "American Homes and Gardens" and "Scientific American," $5.00 per year
Rate of Subscription of "American Homes and Gardens" to foreign countries, $4.00 a year
Rate of Subscription of "American Homes and Gardens" to Canada, $3.50 a year

Published Monthly by Munn & Company, Office of the "Scientific American," 361 Broadway, New York

CHARLES ALLEN MUNN, President - - - - FREDERICK CONVERSE BEACH, Secretary and Treasurer
361 Broadway, New York 361 Broadway, New York

[Copyright, 1909, by Munn & Company. Registered in U. S. Patent Office. Entered as second-class matter, June 15, 1905, at the Post Office at New York, N. Y., under the Act of Congress of March 3, 1879.]

NOTICE TO CONTRIBUTORS—The Editor will be pleased to have contributions submitted, especially when illustrated by good photographs; but he cannot hold himself responsible for manuscripts and photographs. Stamps should in all cases be inclosed for postage if the writers desire the return of their copy.

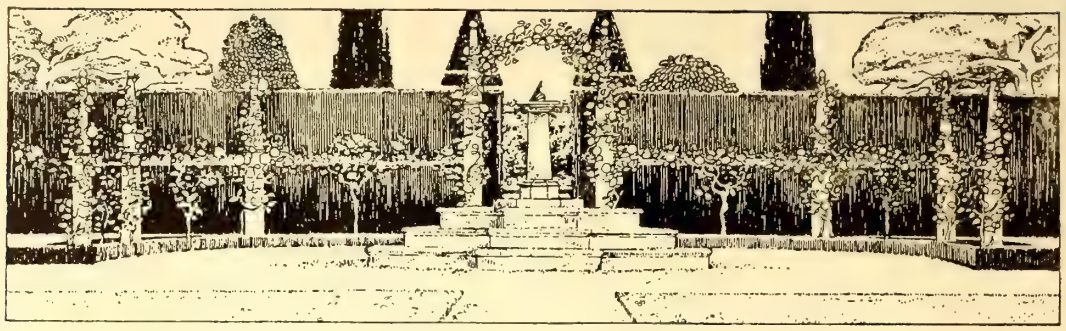
"Fernbrook": the drive to the house and the entrance porch

AMERICAN HOMES AND GARDENS

Volume VI May, 1909 Number 5

"Fernbrook": the studio is a stately vaulted apartment of deep interest

The Garden in Your Town



IS IT a success? If so, the Garden Competition Editor of AMERICAN HOMES AND GARDENS wants to know about it—he will pay $200 in prizes for the best-planted, developed and most successful suburban or village gardens. Write to the Garden Competition Editor and tell him how you planted your garden and what success you had with it; tell him of the plants with which you have had the best results, and also those which have been failures. Send him a good photograph and a plan of the garden. *We want you to help us so that we may help others to beautify their surroundings. You need not be a skilled writer to tell the story of your own garden success. Tell it in your own way.*

$200 in Prizes
For the best gardens we offer:

First Prize	$100.00
Second "	50.00
Third "	25.00
Fourth "	15.00
Fifth "	10.00

Conditions

Competitors for the prizes must comply with the following conditions:

1 A general description of the garden, giving the size of the plot and the kind of plants used.

2 Plans of the plot are required, preferably on a scale of eight feet to the inch, showing the positions of the various plants and shrubs.

3 Photographs of the garden are to be sent, printed on solio paper, and should not be less than 5 x 7 inches in size. If possible, two sets of photographs should be sent, the set showing the plot before improvement was commenced, the other set showing the garden in full bloom.

4 Descriptions, photographs and drawings are to be marked with a pseudonym, which is to be enclosed in a sealed envelope containing the name and address of the competitor. As soon as the judges have decided upon the five best gardens they will notify the Editor, who will open the envelope bearing the proper pseudonym and containing the competitor's name. The competitor will be notified by the Editor that he has won the prize. The gardens awarded prizes will be published in AMERICAN HOMES AND GARDENS.

5 The Garden Competition Editor reserves the right to publish all gardens which, in the opinion of the judges, are worthy of honorable mention. The names of those whose gardens are reproduced will be published with the photograph.

6 Contributions are to be submitted to the Garden Competition Editor, AMERICAN HOMES AND GARDENS, 361 Broadway, New York.

7 The Garden Competition closes September 15, 1909. Contestants need not be subscribers to AMERICAN HOMES AND GARDENS, and no charge or consideration of any kind is required. *No photographs, manuscripts or plans will be returned.*

A few years ago the Editor of AMERICAN HOMES AND GARDENS saw some workingmen's cottage gardens so tastefully laid out and so admirably kept, that the inherent artistic defects of the cottages themselves were almost forgotten. The cottage dwellers had planted these gardens themselves and had cared for them in what little leisure time they could find. They demonstrated the fact that no man is so occupied that he cannot improve his surroundings if he so wills. It struck the Editor that here was a striking illustration of the possibilities of the small plot, and that something should be done to encourage the suburban house owner to embellish what little land he owns by the judicious planting of flowers.

The average suburban dwelling is not a joy to the eye. It usually bears all the marks of a structure which has been planned and turned piecemeal in a factory and hammered together on the spot where it stands. It is as like its neighbor as one city apartment house is like another. To give it distinction, why not let blossoming vines clamber over its pillars and porches? Why not plant its front yard, and the strip of ground that flanks it on either side, with flowers tastefully selected for the purpose? To encourage any such effort is the primary object of this competition. That others, who are not well informed in the art of making the small lot florally attractive, may profit by the experience of others, and seek to improve their grounds, the editor will publish the prize-winning gardens. They will serve as an object-lesson in inexpensive and practical home gardening.

If you have a pretty garden, surely you will aid in this movement. That you may be induced to give all the information in your power, and thus unwittingly help a country-dweller, perhaps hundreds of miles away, the conditions of the competition have been made as simple as possible. You may tell the story of your success in your own way. You may draw the plan of your garden roughly, if you choose, provided that the drawing is intelligible in the light of the descriptive matter sent with it. Most important of all are the photographs. For reproduction they must be sharp and clear. Almost everyone owns a camera these days, and has more or less experience in photography, for which reason the supplying of good photographs should not be difficult. If you do not own a camera yourself, perhaps some neighbor will serve as your photographer.

Above all, it should be remembered that the embellishment of the front yard is to be kept in mind, largely because the front yard is most apt to strike the eye from the village street.

Homes of American Artists

By Barr Ferree

"Fernbrook," the Summer Home of

Thomas Shields Clarke

Lenox, Massachusetts

THE interest that one naturally feels in visiting the home of an artist is greatly heightened by a journey to Mr. Clarke's beautiful summer home at Lenox, in the Berkshires of Western Massachusetts. That the house was designed by so individual an architect as Mr. Wilson Eyre, of Philadelphia, and the garden by so notable an artist as Mr. Clarke himself, is sufficient to stimulate one's interest to the highest pitch; let me say at the outset that the feeling of interest with which this house is approached is more than completely realized in the actuality.

"Fernbrook" lies on a hillside at some distance from the center of Lenox. The roads and shady lanes that lead up to it give a sense of aloofness that is delightful. Mr Clarke describes his dwelling as a simple farmhouse, and so, perhaps, it may seem to him. Unpretentious it truly is compared with some of the summer palaces at Lenox, but to me it appeared a very glorified farmhouse indeed, such a one as it must be very delightful to own, and thoroughly charming to inhabit

The entrance drive meets the outer road quite suddenly, without gate or mark. It is a straight driveway, lined with thick borders of Rugosa roses, and sugar maples beyond, with great open fields extending almost limitlessly on either side. The low, white-stuccoed house is set upon the western edge of the broad green plateau. The entrance porch is a pointed roofed structure of dark stained wood, with floor of red Welsh tile; the whole plentifully overgrown with vines of bittersweet and grapes. A wooden bench stands on each side. The door frame is recessed in the house wall, and the door is of oak, solidly paneled below, with small square glass lights above, copied from a celebrated door in Venice. On each side is a little rectangular window. The planting before the house is chiefly in flower borders with great rows of Rugosa roses and flowering annuals. The house itself is a low structure of white stucco, with a roof of brown shingles. The chimneys are of field stones, with red rectangular chimney pots of distinctive form. The window frames and blinds are painted green, the blinds below being solid, with heart-shaped openings in their upper parts, while the blinds of the second story have movable slats. At each end is a cut-under porch, with vine-covered trellis beyond. The silhouette of the house is distinctly that of the mountain that rises behind it, and it is, in a very true way, in entire keeping with its surroundings. That is to say, it is a house pre-eminently suited to its environment, well studied in every aspect, individual in design, and in all its detail a true artist's house. It is exactly the kind of a house suited to this splendid country.

Bronze sun-dial designed by Mr. Clarke

Being adapted to summer use only there is no vestibule, and the visitor is ushered from the porch directly into the hall, which is furnished and used as a living-room. It is a rectangular apartment, with a

Angle porch and bay window of entrance front

large window on the opposite side from which it is entered, giving a charming view of the terraced garden and mountain beyond. The disposition of the other rooms is best indicated from this spot. On the right, beyond the stairs, is the library; on the same side, but farther back, is Mr. Clarke's studio. On the left is the dining-room, with the kitchen and service rooms beyond.

The woodwork of the hall, and, indeed, of all the principal rooms, is oak stained Flemish brown. The walls here are lined with salmon-brown burlap. The ceiling is beamed, with exposed panels of the same color as the walls. The mantel is of oak, and the fireplace has facings and hearth of Welsh tile. A small tile shelf projects above the opening, and is below the larger shelf, which is supported by carved corbels. The panel of the overmantel is colored like the walls, and is contained, at each end, within two small models of the caryitides, carved by Mr. Clarke for the Appellate Court House in New York. The andirons of bronze, designed in the Gothic style, are also by Mr. Clarke.

Every part of this room is endowed with charm and interest. The fireplace, which in many apartments is the single structural feature of interest, is here but one of many. A superb old Italian cabinet adjoins it. The small windows on each side of the entrance door contain panels of antique stained glass. The door to the studio, further on, has the form of the Gothic pointed arch, and seems strangely low and mysterious; as a matter of fact it is of quite ample height.

The dining-room has a wainscot of paneled oak that rises nearly to the low vaulted ceiling. The window frames rise above the summit of the wall paneling, which is surmounted with a plate or vase shelf. The curtains are of thin green silk, quite bright in color. The fireplace has facings of Mercer tile, and the shelf is supported on two old carved columns that formed part of the decoration of an ancient Swiss chapel. The overmantel is plain.

The house stands on a hillside at some distance from the center of Lenox

A glazed door in one corner opens to the little porch on this side of the house. It is used as a breakfast-room, and is a cool and delightful place. The architectural treatment of the parts here is so simple as to be almost bare. This, however, is but to emphasize the decoration by means of vines and plants. In one corner is a great yellow and green jar of glazed pottery; a lusty gourd has taken root within it and clambers lazily toward the roof. On the opposite side are oleanders in tubs and boxes.

The library is quite on the further side of the house, and contains a window overlooking the entrance front. It is a smallish room, with walls of green grass-cloth. It has a Tudor ceiling, the pattern of which is traced in lines of stained wood, applied to the plaster. The fireplace has facings of Moravian tile, and a hearth of Welsh tile.

As in the dining-room, a door in one corner leads to a brick paved porch, with terrace beyond. On the entrance front the opening is walled with a parapet, on which stands a long box of geraniums, red and pink, growing amid a mass of white annual phlox. The gourd jar here is green, and the boxed plants are hydrangeas. The pergola extension is supported by cedar posts, with parapets of open cedar work. There is a beautiful outlook here across the gently flowered grounds.

I have dwelt at some length on the details of these side porches, for they both explain and typify the individual character of this delightful house. Their positions and dimensions are practically identical, and their general aspect is not unlike. Yet they are distinctly individual and, indeed, personal. One has a low front wall with its box of bloom. There is a great glazed jar in each, but they are not alike in color nor in design. The plants in tubs are of different varieties, and even the vines of the pergolas are distinct. And with all, there is a delightful freedom and charm in both porches and a quite marked individuality of effect has been obtained by means of the most subtle variations and, in a large measure, by the use

Angle of entrance front and studio chimney

The terraced court on the inner front of the house

of the simplest devices. It is typical of the whole house that this individuality should have been acquired in this way, and the quiet beauty thus produced is equally typical of the whole.

A semicircular form is given to the terrace beyond the north porch by the circlet of flower borders and mountain laurel that surround it. In the center is an immense chestnut tree and without is a row of small Scotch pines. The barns and farm buildings are at some distance beyond, and are so well hidden behind a mass of trees that scarce more than their tops are visible.

Almost at the point where the circle inclosure on the north touches the house wall is the studio chimney. Surely never was a chimney given happier form than this! It is completely external to the house and has the real value of a tower. It is built of flat stones, laid with wide joints. It has a great square base, surmounted with a shingled roof, slightly incurved, from the center of which rises the shaft, somewhat irregular in outline, but loftily dignified. Just above the roof a small bas-relief is let into the shaft wall. Slabs of stone laid in the grass, and steps further on, lead down through a rustic arch to the broad green terrace upon which rests the western (and most picturesque) side of the house.

The studio is the largest room in the house, and has a floor area of thirty by forty-two feet. It is a vaulted apartment somewhat freely modeled after a refectory in a monastery in Ragusa, in Sicily, that had long appealed to Mr. Clarke as an ideal room. The adaptation to his needs here has been highly successful. It is but justice to the architect, however, to add that this adaptation is one of idea only and not of details; this room is quite as individual as any in the house.

The library mantel and fireplace

It is placed at a lower level than the other parts, and is four steps below the hall and the north porch, from either of which it may be entered. The walls are completely plain, with a low base board, and are treated with ecru paint. The windows are somewhat varied in size and form, but all have frames with broad lower shelves, and long, bracket-like treatment of the sides, with a top shelf above. At the entrance end is a balcony, hung from the ceiling by heavy rods of twisted steel, and reached by a stair within the room. Beneath it a piece of old Flemish tapestry is hung against the inner wall, and in front, dependent from the ceiling, is a fine model of an old Dutch admiral's ship. The fireplace occupies the center of one of the longer sides, and stands within an inglenook. The whole of this space is lined and faced with red brick. Each side wall is pierced for a small leaded window, below which is a low stone bench. A vast oak beam carries the wall above the inglenook. There are numerous rugs on the hardwood floors, and the windows have sash curtains of pongee silk. There is a host of curious and beautiful things in this room; old jars of pottery and brass, Japanese and other armor, basket and bead work, copper vessels and plaster casts, and numerous sketches in oil and water colors by Mr. Clarke, for his achievements in these arts are quite as well known as in his chosen profession of sculpture. It is the treasure-trove of an artist, the gatherings of many wanderings in foreign lands, and here charming and delightful contributions to the harmony and interest of this fine room.

And now the terrace. It is the chiefest of the beauties of this very beautiful house. The garden work here, as elsewhere on the estate, was designed and carried out by Mr. Clarke, and in the open terraced court at the back of the house he had Mr. Eyre's interesting grouping and detail as his foundation and background. Very remarkable results might well be looked for in work of two artists under the circumstances that ruled here, and it is but the simple truth to say that remarkable results were obtained.

And by the simplest means. This is the surprising and gratifying fact that presents itself in every part of "Fernbrook." Everything here is so charming, simple and delightful! There has been no building with costly marbles; no equipment with expensive furnishings; no sumptuous planting or elaborate gardening. But there is beauty everywhere; there is the artist's touch and soul; nature has not been forced but trained, gently molded, as it were, to meet the highly sensitive taste of the artist owner. Nowhere else could this be so completely manifested as in his own home and nowhere here is it so clearly shown as in the inner court or terrace.

A glazed door from the hall leads to it and admits to the pergola. The space is brick-paved, laid herringbone-fashion, with an outer parapet of flat field stones, with wide mortar joints. Cedar posts stand on this and support the open roof, which is thickly overgrown with bittersweet and actinidia and grape-vines. A-top the parapet are all manner of delightful pots and jars, variously sized, shaped and colored and containing many growing plants. Stone steps, between low stone walls, lead to a lower level; at the base are jars of red terra cotta containing dwarf apple trees, mimic little things with real apples ripening on them. Enclosing this space are the wings of the house, the studio on the right, the service wing on the left; below the latter is a grape-vine pergola. A second parapet encloses its outer margin, and bushes of golden elder glow at the opening to the lawn below.

The entrance hall is furnished and used as a living-room

The dining-room has an oak wainscot and low vaulted ceiling

Below the walls are massed the hollyhocks and larkspur and other plants, and, looking back, the whole descent seems ablaze with flowers and green foliage.

Everywhere is life and vitality. In the center, at the base of the terraces, is an open circle of thickly growing achillae. A lovely flowering scheme is arranged here, with blue of the larkspur, yellow of the primrose, and white of the achillae. In the center of one semicircle is a bronze sun-dial—a small cupid on a globe, designed by Mr. Clarke. Above are the two terraced walls, and the cedar pergola at the summit, the house walls and gables—the latter singularly interesting in their variety and arrangement—form an immensely effective background and inclosure to the beautiful picture.

The grassed space at the base comprises an ample area. Generally rectangular in form, it is outbordered with Japanese barberry, beyond which are fine poplars, widely spaced. In the center is a rustic arbor that serves as an archway, and stone steps down to a long shaded path leading to the brook and children's log cabin in the wood at the foot of the hill.

There is so much beauty here, and it is all so lovely that it is both difficult and unnecessary to single out any one general feature as especially worthy of admiration. The really great point is that it is all worthy and all admirable. Each part has its own charm and its own attractiveness, and this is always of distinctive beauty and interest. From every point below the house one has but to turn to it for the eye to be saturated with its cultured beauty; and from the house one looks out constantly, and in every direction, to natural beauty of the most delightful kind. This is as true of the front of the house as of the back; and it is as true of the north aspect as of the south. There are hills and mountains everywhere. Behind the house rises the great bulk of "Yokun Seat," a name derived from Yokun, an old Mohican chief. It is covered to the top with oaks, chestnuts and hemlocks, and is included within the limits of "Fernbrook" farm.

On the other side, beyond the Housatonic Valley, with its farms and hamlets, one sees "October Mountain" and the far-distant mountains of Vermont.

There is nowhere a sense of inclosure, and everything is on the largest scale, a scale of real vastness and of great openness. The world seems better because there is such a place to live in, and Mr. Clarke, in his open-hearted artistic way has done more than his share to make his part of it even more beautiful than Nature at her best could have accomplished unaided.

Yet the aids here are natural aids. Nature has been adorned in the gentlest fashion and only with her most delicate deckings. The mere erection of the house presupposed and necessitated a treatment of the immediately adjacent grounds that would wield it into its environment, join it to the soil, as it were, and give the whole the character of a natural growth. At no time and in no place is this an easy task. The best of houses is an artificial construction, and the most artistic of them fails in destroying the notion that it occupies space nature intended for something else, something of her own making and growing, something she herself had created and nourished. Every house must, in fact, be adjusted to its environment, and for this purpose we have trees and shrubs, vines and flowers.

But no good house needs to be hid or covered with vegetation, least of all so fine a house as Mr. Eyre has designed for Mr. Clarke. Yet Mr. Eyre's own rare taste in building design would be quite incomplete without the outer final dressing of Nature's own garment. The problems here involved Mr. Clarke set himself to solve, as has been stated, and once more I must draw attention to the delightfully beautiful way in which this has been done.

"Fernbrook," to repeat, is a property of some size. Great broad fields stretch away from the house on every side. These fields are so broad and spacious that the lofty mountain behind the house, which actually incloses the property on that side, is literally fixed at some distance from it. There is a splendid absence of "nearness" here that gives the house a remarkably distinct individuality. Everything is amazingly remote from everything else. The place is thus too large for complete cultivation, nor is universal treatment essential. After all, as Mr. Clarke himself says, it is but a simple farmhouse, and if the broad acres are not laid down in corn or wheat or potatoes, there is at least an abundance of grass and meadow, and an inexhaustible supply of pure sweet country air that comes only with the great open spaces of the real countryside.

Thus the planting problem quite naturally concentrated itself immediately around the house. The entrance driveway is marked out, but not inclosed; there is ample space between the sugar maples to see the wide fields beyond. And the floral planting is close by the house, some in front, some at the ends, more within at the terraces. And it is all beautifully done with flowers and plants whose names are commonplaces to most florists, yet whose beauty is eternal and none the less because often so familiar.

Rustic arbor and poplar trees

I am very sure that could one but hover about this lovely estate in an airship it would present the aspect of a great sheet of the deepest emerald, on which, somewhat toward one side, would appear a vast floral wreath, a bit gay in color, perhaps, but with fine masses of fair loveliness, surrounding the house, brooding amid this beauty like a fine jewel set in the rarest enamels. Yet, after all, such a delightful vision, or even the fine photographs which appear on these pages would not compare with interest with the place itself as seen from the ground, or as approached by carriage or automobile.

Practical Suggestions for Domestic Ventilation

By Thaleon Blake, C. E.

THE kitchen is the one room which is the room, every day in the week, where numerous odors originate. Cooking must be done, and at the rate of three meals daily there are twenty-one meals weekly, one thousand and ninety-five meals yearly. Think of it—1,095 times each year various odorous foods are prepared for consumption! Then assume that in each meal there are but three substances to be heated which are capable of giving off odors, and you have the great number of 3,285 individual odors! These figures would in practice mean nothing were it not for the fact that outside of the better equipped kitchens there are few stove and range hoods to remove these noisome odors.

Fig. 1 shows the stove hood which any tinsmith can make, or which can be purchased from any of the manufacturers of ranges for a few dollars. The fire draft up the chimney assists the hot air and odors to arise and escape from the stove.

In most American homes the family washing is also done in the kitchen, usually on Monday, long hallowed as "wash-day." If stove hoods may justly be called a scarcity—taking *all* the American homes into account—washtub hoods, being fewer in number, are a positive rarity. And if the larded smells of some kitchens at meal time are offensive, the escaping soap smells of "boiling suds" are decidedly worse—dangerous, in fact, to the lung tissues.

The heavy-laden air, moisture saturated, of a room in which a washing is being done on a cold winter's day, when the natural tendency is to shut the room up, is deadly to lungs, to throat, and to head passages, and is a prolific cause of many a woman's "bad cold," sore throat, pleurisy or pneumonia. The graveyard swallows many a victim to the steam of wash-day. Neuralgic headaches are about the least of the afflictions to be expected from breathing confined, moist air. Yet hoods over washtubs and boilers will remove nearly all of the hot steam.

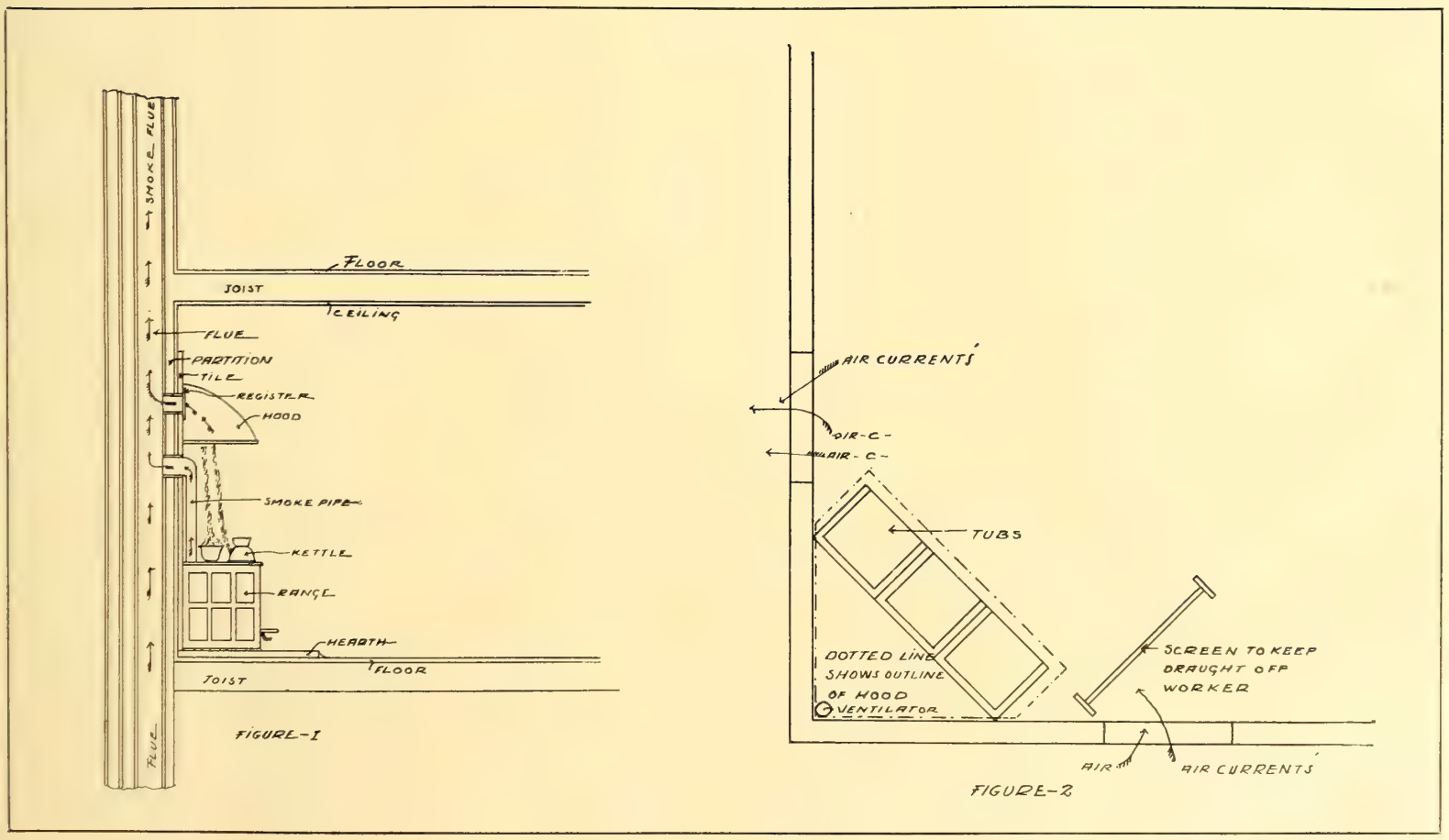
Fig. 2 shows the advantage of placing the tubs between opposite windows if possible, so that the breeze blowing through the room may assist to take out the gases. A screen will keep any draft directly off the worker.

Washed clothes should never be dried in any place where the family will have to breathe the moisture they give up. The capacity of air to pick up and carry away moisture is limited. Air is said to be "saturated" when it is fully loaded and can carry off no more. When housewives undertake to dry wash clothes in an air-tight room, they defeat their purpose, as the air quickly takes up as much water from the clothes as it can, after which the process of "drying" stops. A continuous supply of fresh air is absolutely necessary to dry clothes rapidly. The more thoroughly the air is made to circulate in the clothes-drying room, the speedier is the desired result reached.

The difference in specific gravity of the water-laden air within and the dry air without, is usually sufficient to set up a movement which is accelerated if there be also a difference of temperature. Humidity and temperature, therefore, are the primary causes of air moving so constantly. Forced drafts are thus obviated.

Fig. 3 illustrates an arrangement of clothes-lines in a room which has windows at opposite ends. Anything so extensive is unnecessary, a simple clothes rack alone being used, the rack should by all means be placed between windows or doors, so that it intercepts the drafts.

If a house is situated where winds blowing from certain quarters of the heavens afford scarcely any draft through



the clothes room, an up-ended hood at each end window or door will probably divert the wind into the room. Fig. 4 explains this; while Fig. 5 shows how, by a judicious open-

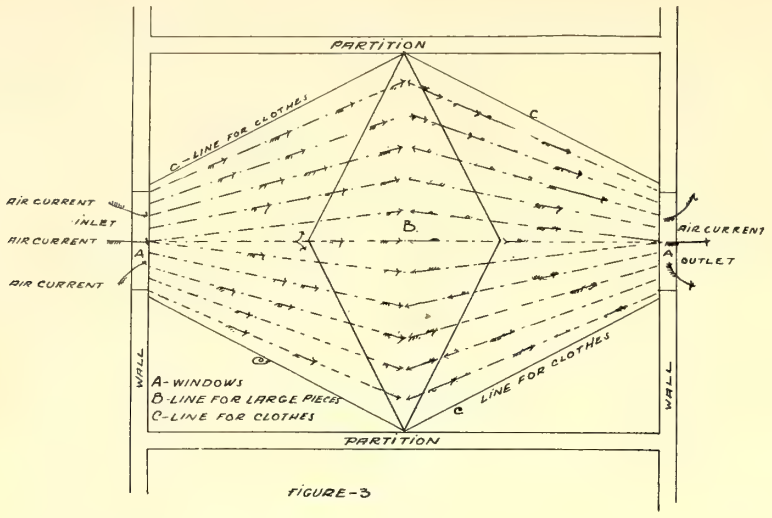


FIGURE-3

ing of shutters, the wind may be deflected through a room, or suite of rooms.

Beyond the ventilation to take away odors, is the more important ventilation of the sleeping-rooms. Fresh air will preserve health; it can restore health, as nothing can or will. Thousands of people coddle themselves into all sorts of disabilities, to disease, and to death itself. The atmosphere, not shelter, is the source of physical wellbeing, with its attendant phenomena of vitality and energy.

When primitive man housed himself he founded architecture and the medical profession. As soon as man housed the beasts of the field, he created a branch of the medical profession known as veterinary surgeons. Practically all of the lesser diseases, and even that ogre, consumption, are amendable by fresh air, and especially open-air treatment.

Men delight to declare that they are little less than the angels. Theoretically it may be so; but it is indisputable that practically they are but animals, subject to Nature's laws exactly like all animals. Men may not care to hear that they have evoluted from the apes; but they must know, for their own good, that, like the apes, confinement within doors is fatal to their physical prosperity.

It is to be remarked that all open air is beneficial, but cold

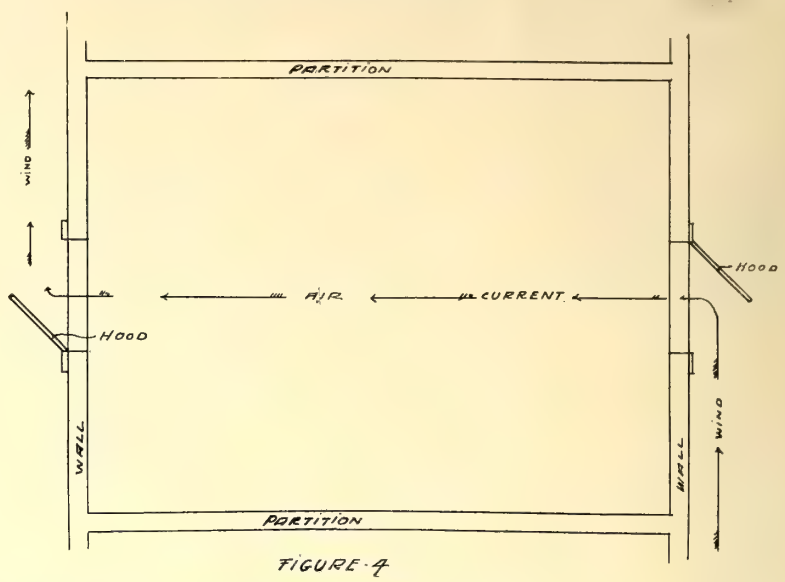


FIGURE-4

air has peculiar therapeutic and hygienic value. House drafts, however, are best avoided; and, consequently, so many imagine that a free air circulation in sleeping-rooms is not conducive to health.

As in Fig. 6, where there is but one window, it is preferable to set the bed opposite the window, which should be up at bottom and down at top. Where two rooms open en suite, if the bed must be placed near the communicating door, a screen should be set so as partially to shield the bed (Fig. 7). Fig. 8 shows how air passes both at top and bottom of an upper sash when it is lowered.

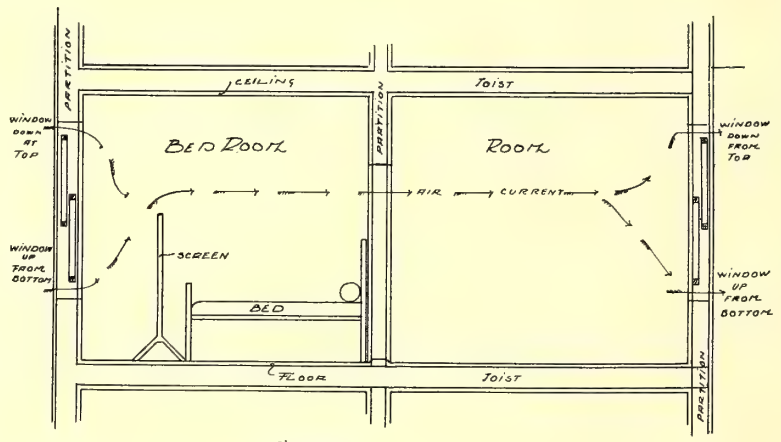


FIGURE-7

Fig. 9 portrays the movements induced by the fact that moist, damp, saturated air is heavier than dry air.

If a consumptive not yet bedfast will take to a "coffin" while yet alive, and sleep in it on a porch, or under a *sideless* tent—that is, a waterproof square piece of cloth fastened at the corners by ropes to posts or trees, he may continue to sleep o'nights above ground a long time before going below to bunk. I suggest this manner of making up a sleeping nest from my own experience in canoe cruising; for, when I learned to sleep in my canoe, or under it, for several years'

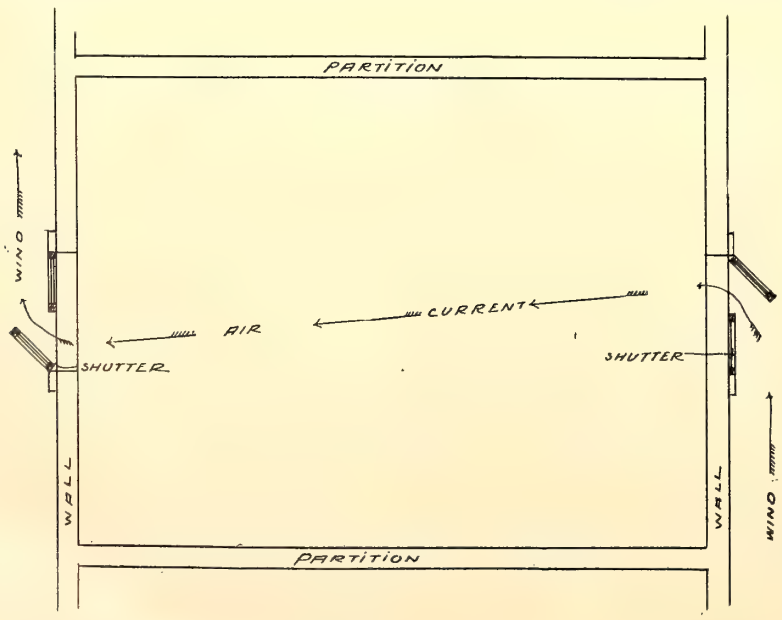


FIGURE-5

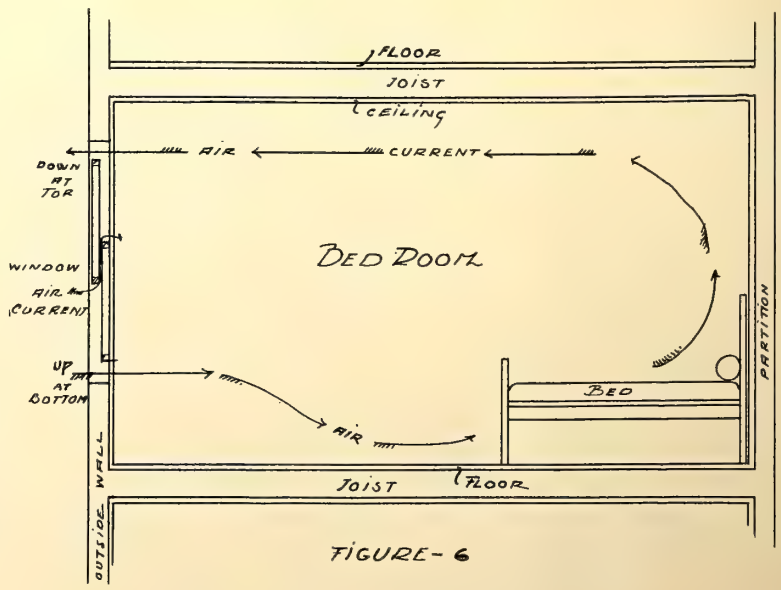


FIGURE-6

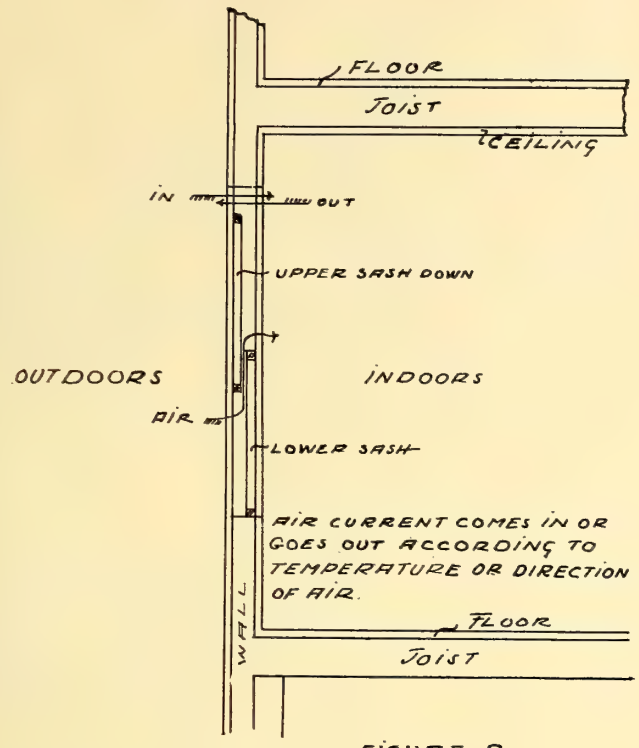


FIGURE-8

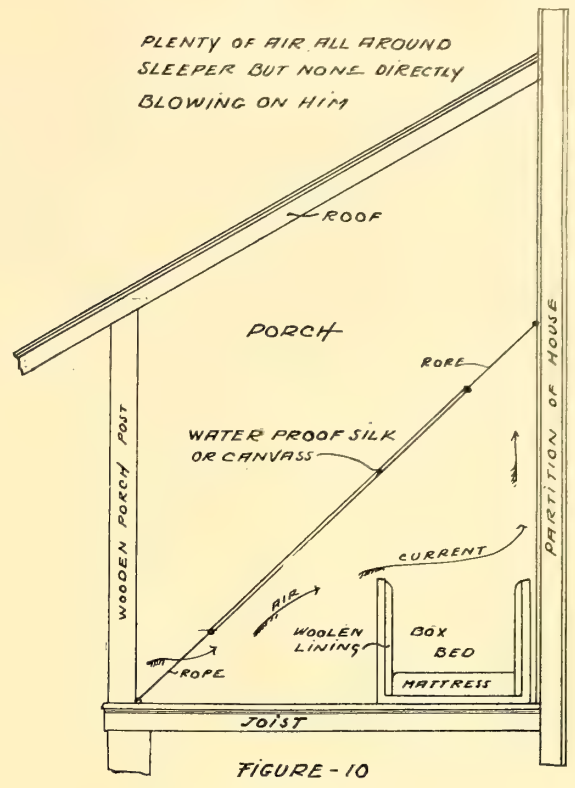


FIGURE-10

cruises I left my tent at home. The suggestion for a "box" to sleep in as a bed is founded on the well-known liability of cold air to penetrate between the blankets and other covers. Fig. 10 shows how this is done. The sides of my canoe used to make my outdoor's sleeping warm and cozy. Why should not a box do as well?

Fresh air indoors, and outdoor sleeping if possible, is better than medicine or life insurance; although, as to that, 'tis well to take out some insurance against accidents, and doctor with "Diet and Nature, M. D.'s."

Salubrious climate and wholesome food are conducive to vitality—a healthy body and a sane mind; and it is probably not too much to add—a happy disposition and a moral existence.

The fact is, modern science has reached a point that puts the house problem in two aspects. We must have houses for shelter, but the house is no sooner built than the great problem of free air and complete circulation is presented. And this must be solved also, as well as the protective problems of house building, or there will be a complete lack of utility in the construction.

But it is not sufficient simply to state these two problems, or rather these two aspects of the one problem. Natural instinct has given us the natural craving for shelter which we gratify in house erection, while modern science has declared that, even while we need houses, we must open them sufficiently to give us all the air we can obtain hygienically. Now the latter proposition is not generally understood, and is certainly not generally admitted. Why, it is often asked, build inclosures, only to knock holes in them? But this knocking of holes is most important and essential, and until its value is generally admitted and understood our houses will quite fail in yielding their fullest utility.

The principles of ventilating a house are so simple it is truly wonderful that they are so little understood and so seldom put into practise. The air is proverbially restless; the poets are inspired by its invisible comings and goings, to refer to it in many memorable similes and metaphors; but to the physicist, whose business with it is too practical to allow sentiment to creep in, the mystery of its vagabond nature resolves into one of the commonest phenomenon known to men, of which water is the chief example—the necessity and the endless struggle to preserve that balance which is induced by the iron hand of gravity of which the physicist can speak so eloquently,

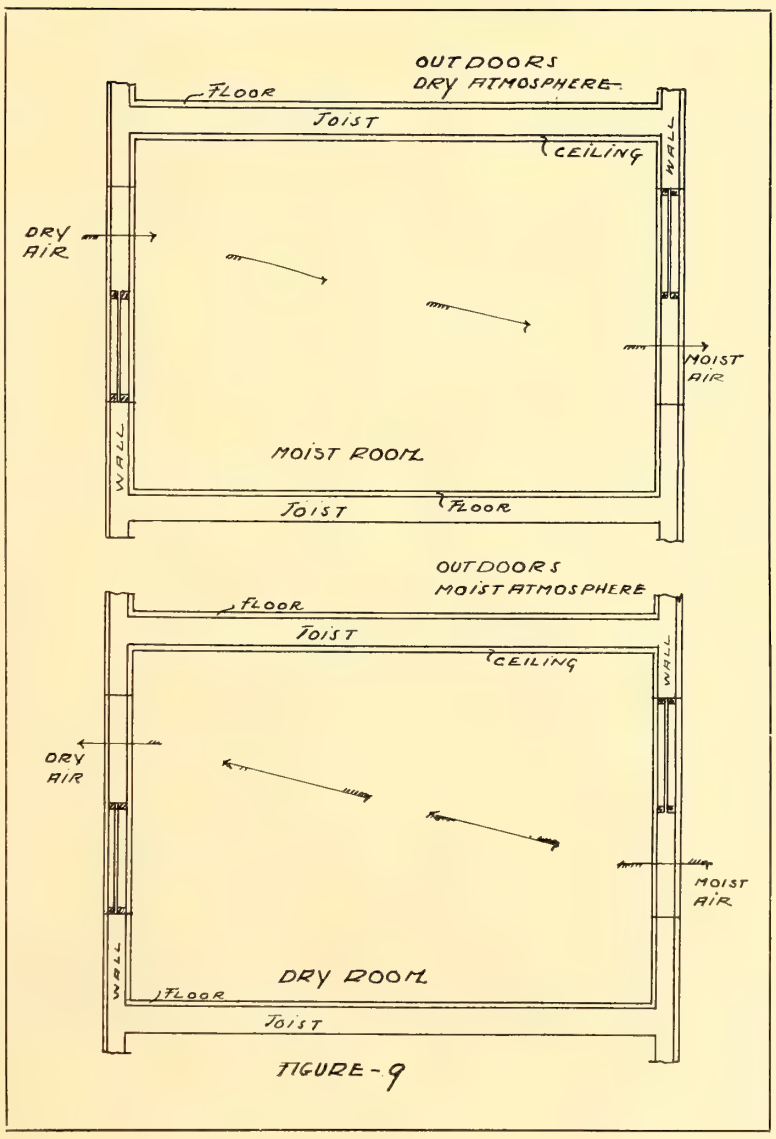
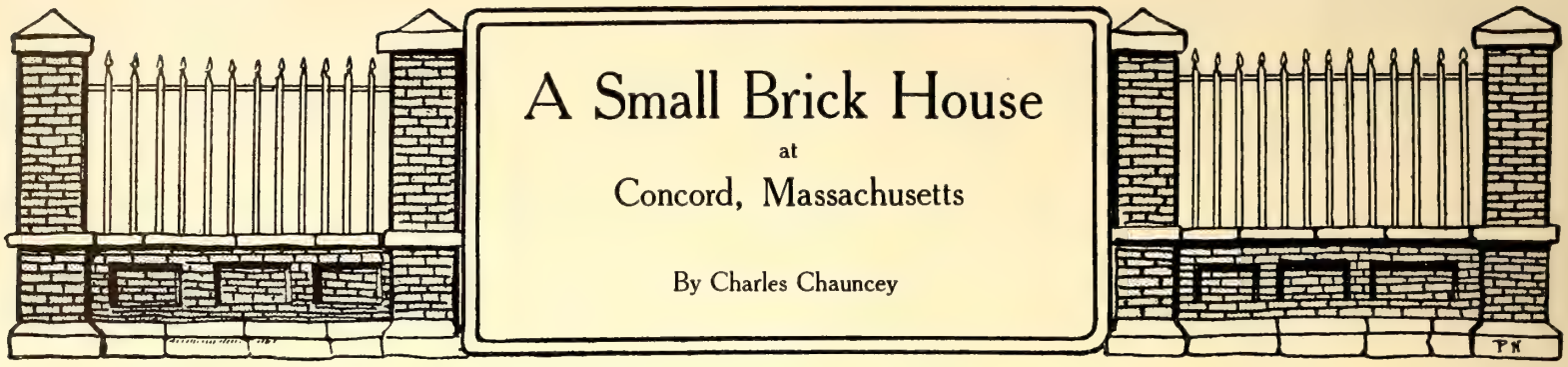


FIGURE-9



A Small Brick House

at

Concord, Massachusetts

By Charles Chauncey

THE house built for Mr. Charles Francis Adams, at Concord, Mass., represents the type of house built in many of the New England towns in the seventeenth century. Its form is copied after the leanto-roof house of that period, except that it is built of brick instead of wood, which was the material used in those days.

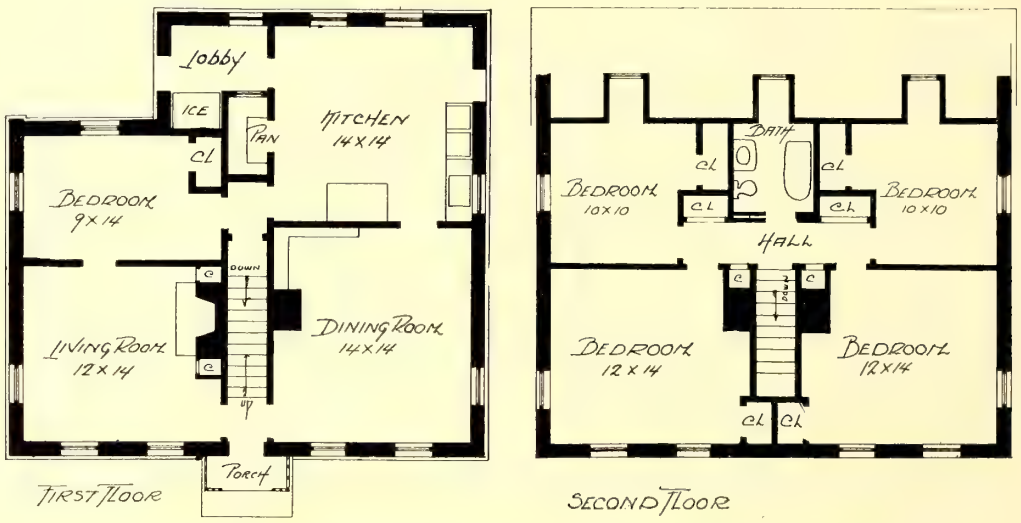
In placing the house on its site it was found best to keep it close to the ground, in order to carry out the custom of its prototype, consequently it is built with only one step from the grade to the level of the first floor.

The exterior walls are built of red brick, with windows of small lights disposed at regular intervals. The joints of the brickwork are made more pronounced by the white mortar in which the bricks are laid and its broad pointing.

The front doorway has an ornamental casing of Colonial design, and is built without any porch roof, as was the custom of the builders of the seventeenth century. A walk is brought in from the driveway, composed of stepping stones, to the brick terrace in front of the house. The entrance on the side is covered with a hood supported on a trellis.

The trimmings are painted white and the blinds are painted green of a dark ivy color. The roof is covered with white cedar shingles, and stained a soft green color with a mossy effect.

From a small porch at the front of the house an entrance is made to a small lobby from which the living and dining-rooms are reached. A stairway from the lobby rises to the second story, while the stairs from the kitchen descend under the main stairway to a cellar which is admirably built.

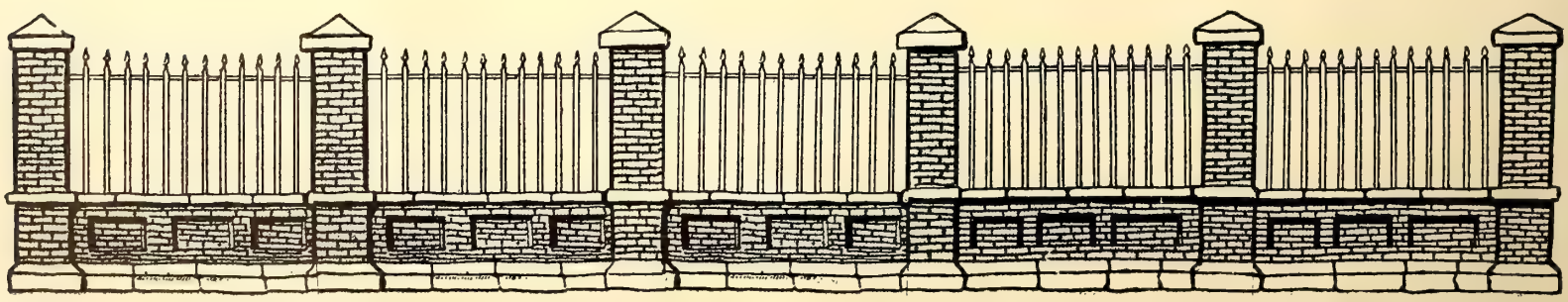


The first and second floor plans show a convenient arrangement of rooms

The interior is trimmed with cypress, stained and finished in a soft brown tone. The living-room is provided with a fireplace built of red brick laid in white mortar. The facings and hearth are laid with similar brick and in white mortar. The walls of this room are covered with a two-tone yellowish-brown wall paper.

The dining-room is treated in a green effect with a two-tone striped wall paper. There is only one chimney in the house, and it is built so as to arch over the staircase and come out of the roof in one part.

A door at the back of the dining-room opens into the kitchen. It is furnished with a hearth of stone for the range, a sink, two laundry tubs, a pantry, and a rear lobby large enough to hold an ice-box. There is a bedroom on this floor, complete and fitted with a large closet.



A Leanto House of the Seventeenth Century Reproduced in Brick

(See description on opposite page)

The hooded entrance at the side of the house has a trellis

The entrance front has the simple lines of the Colonial

Flower-Box Beauty

By F. Maude Smith

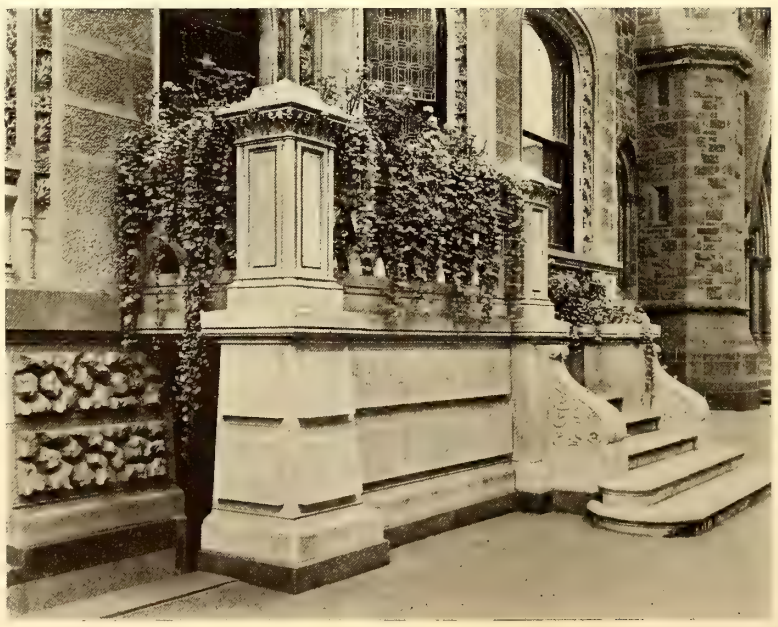
WINDOW boxes, once quite rare, have come to be delightfully frequent. Flower lovers who had them twenty years ago and more, and were almost alone in their charming indulgences, have lived to see their example followed by a great many people, especially such as live in apartments or in houses with little or no ground. However much one may have gone in for them, a sojourn abroad, especially in England, where the moist, equable temperature encourages lush luxuriance of growth and blossoms, is invariably an inspiration. Once the window box was purely a summer beautifier; now it may be seen all the year round. Easter Sunday finds very many window boxes freshly filled, in some instances with hot-house plants. The Easter window box, however, is a luxury, and must be renewed for summer. A charming trio on a brown-stone house was quaintly planted with dainty roses, English daisies and poetic pansies, the rustic boxes being partly hidden by English ivy. Perhaps more fetching were the boxes planted with Marguerites, the jaunty blossoms nodding well above a wealth of pansies. The ivy was very full and rich.

In some all-the-year-round boxes the midsummer display shows a predominance of vivid-hued foliage plants, the bronze and crimson variety of acalypha being the most striking. This is effective with other foliage of a glossy green, such plants as the aspidistra, with its broad leaves, plain or striped with cream, and the anthericum (St. Bruno's lily) with its long, graceful leaves, being very useful. The aspidistra and anthericum are indeed effective by themselves, and both are so modest in price, so easy of culture and so jauntily cheery that many keep a stock always on hand. Asparagus Sprengeri is a pretty addition, and in the south of Florida last winter one might see two pretty window boxes with nothing else in them. The dainty plants seemed in their element and formed a solid mass of delicate greenery that swept the ground. If well started indoors and given a sheltered position such boxes would thrive in the north.

Of more general interest, however, is the window box from which gay blossoms greet the world. It is not restricted to those who need have no thought of the cost. The window box which will be a joy for the entire season should be put out not earlier than May fifteenth. Ours were good until December first last year. Of course, the late blossoming was not profuse, but until the last the vines were dainty swaying masses and the plants not unsightly.

Though not at all a usual choice we had lysimachia nummularia, also called creeping Jenny and moneywort, for boxes on the north side of the house. Few even know the name of this pretty, graceful vine which costs but a dime (and is easily divided), but which may be kept on hand by planting under trees where grass will not grow. A good bit of it is required to make a handsome fringe—and to my mind the fringe is a most important, if not the most important, part of a window box, or any other flower box, be it for porch, balcony, fence or over a doorway. With this we use the deep salmon pink geranium, not the very double variety, and, on a brown stone house, the effect is very good. By midsummer the graceful vines ranged from half a yard to nearly two yards in length. Of course they would not interest such persons as long for the impossible—usually persons who do nothing at all themselves—since they contain no exotics or other oddities. In fact, the average window box beginner errs on the side of variety. For the sake of being cheerful some misguided souls make an inartistic hodge-podge by crowding in every conceivable sort of plant and blossom color. As a rule even two colors of geranium should be avoided. And of these the gay scarlet variety is undoubtedly the standby.

The cellar window may be partially screened with miniature evergreens



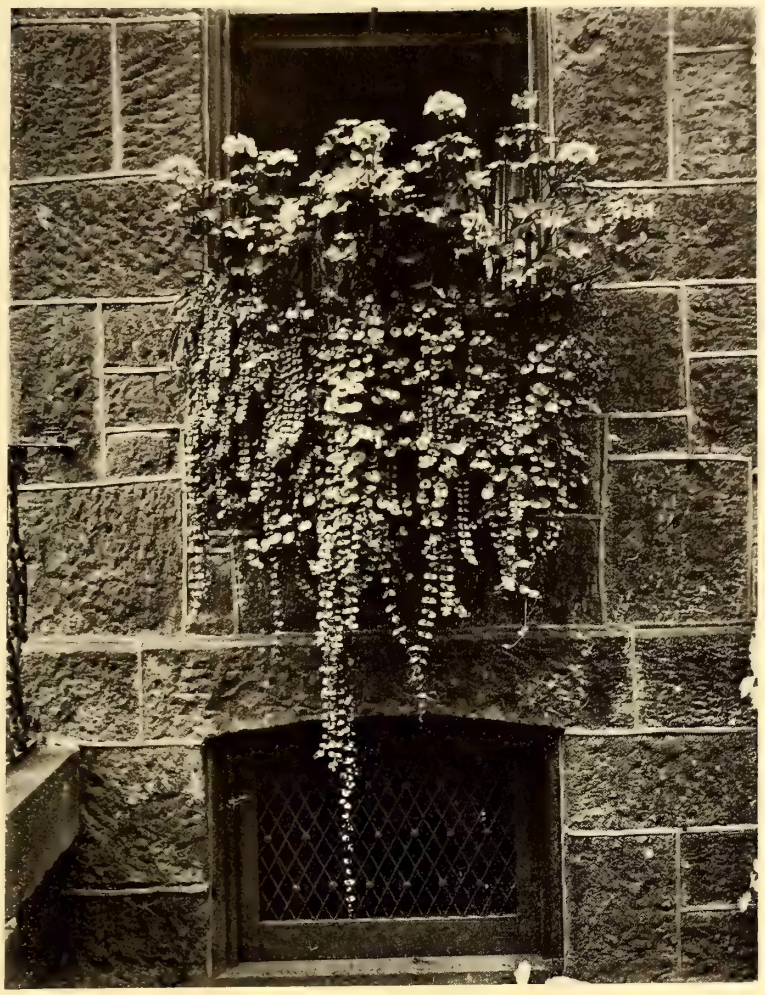
A graceful growth of overhanging vines

To return to the salmon-pink geranium, it is also lovely with variegated tradescantia (spider-wort), this especial variety of this fine vine showing leaves of purple and silver and green. The purple is particularly effective with the salmon-pink blossoms. For our front windows, which are not wide, three geranium each sufficed. One must choose fine young stocky ones, however, with three or four strong shoots each. If one keeps the lysimachia in stock the plants for very pretty boxes need cost but little.

Of course the standby vine is the variegated vinca, cousin of the myrtle. It thrives in any situation and has a picturesque habit of

growth. It, too, looks exceedingly well with salmon-pink geraniums. A full fringe of it is not cheap, however. It served in some most effective boxes. Both the blossoms and the vines, which adorned the steps and porch, showed to exquisite advantage as they swept against the creamy gray of the stone with every vagrant breeze.

With the coming of cold weather we continue our window box growth with various tiny evergreen trees. Even the cellar windows of one house are thus adorned. These are renewed as required, winter and summer. As a matter of fact these trees do well to live three months in the winters of northern cities, and it matters little whether or no they be watered. If they are not watered they will die, and if they are watered the freezing of the water about the roots is likewise fatal. Average persons do not stop to think that the roots of evergreens which are growing in the soil reach below the frozen surface.



Salmon-pink geraniums and lysimachia nummularia in midsummer

As for the boxes themselves, there is the greatest variety, and while tiles may be beautiful, they are quite unnecessary with fine vines. Zinc boxes, painted the color of the house, are very good. They should have handles at the ends. It costs something to have these made, but they last a long time if properly cared for. Any box, however, must be emptied, cleaned, and put in a dry place when its season of beauty is over.

As for the planting, it is best to have a few buckets of soil from a gardener. Each of the boxes should have at least three holes for drainage, and over each hole should be laid some bits of broken pots. Then comes a good layer of the soil. Then the vines should be carefully placed along the front and sides of the boxes, adding enough soil to hold them in place. And then along the center of the box place the important plants, spacing according to their number.

The whole crux of window box success is, of course, in the watering, unless the season should be unprecedently rainy. And even then they receive little unless the rain pelts against their side of the house. In ordinary weather we have found that they must be watered every day. Sundown or a trifle later is the best time, and it matters little whether they be refreshed from the sprinkler attachment of the hose or the watering pot. As a rule each box requires the gallon size watering pot twice filled. Of course they may be sprinkled by hand from a large pan of water. It would be difficult to think of any one form of decoration that so beautifies a house both without and within.

One should never undertake window boxes unless one is prepared to give some time to them. It is true not much attention is required, but the demands they make upon one's time is urgent and can not be avoided. Flower boxes fail, as a rule, only from lack of care and lack of water. One is hardly likely to put them out too early, and if they are touched with frost in the fall nothing whatever can save them. The great essential is water, and if there be any neglect in this particular the failure of the whole is very swift and very certain. Absolutely nothing can save them, and even if not actually dried to death they seldom revive in anything like their original beauty. One must, therefore, be very certain that one will be able to water the boxes regularly, or it will be better not to undertake them at all. Window boxes have come into such general modern use that they

A well-planted box, even when first put out, is a thing of beauty

The variegated vinca sweeps luxuriantly over the gray stone

are no longer confined to windows. In some houses their use is most elaborate, and they are found beside the steps or strung in wonderful rows of color above a porch or atop a terrace wall. They are boxes still, although a window box can only be a window box when directly applied to a window. But what matters such rigidness of nomenclature. A box is a box, wherever it is placed, and a box filled with flowering plants, or with baby evergreens or non-flowering plants, is still a thing of beauty and a source of constant pleasure wherever it is placed and wherever it is successfully grown. But the more elaborate use of the flower box is better left in the hands of the professional gardener than undertaken by the individual house-owner. The watering of the most beautiful flowers may become a burden when their care is a labor.

Old-fashioned flowers fill the box of this window

Whether one has a garden or not, the flower box may be a source of delight at all times. Perhaps it may seem most naturally suited to those houses that have no garden of their own, but be assured this is not so. A growth of brilliant bloom, of warm green, or of variegated leaves, is always welcome against the house, be the garden as elaborate as it may. It both beautifies and adorns, and it at once rests the eye and gives a welcome emphasis to the openings of the house wall.

If, perchance, the box fails, the remedy of replanting is always at hand. And the amount involved is always so small, for the boxes themselves, for the ordinary window are but small in size, that fresh boxes can always be looked for and can always be maintained. This much, at least, can not be said of the garden in the ground, where, failure once admitted, is more than likely to be permanent in its ruin. It is this readiness and cheapness with which window-box gardening can be carried out that constitutes one of its most attractive features.

Well-filled flower boxes along the rail of the piazza are an attractive feature

Red geraniums and green vines are harmonious colors for a white house

The Porch Sitting-Room

By Ralph de Martin

WHY stay within a house if one can be comfortable without it? This is the real philosophy of the country home. Thousands of dollars, and sometimes many of them, go into the building of a handsome house which is no sooner completed than the owners proceed to devise all manner of ways of staying without it. Of course this is natural, and just what is to be expected; but sometimes the person who is not fortunate enough to own one of these fine houses—nor even possessed of the acquaintance that takes one within them—wonders a bit that so much money should have been spent on a building that is so little used.

But back of this seeming non-use is a very real utility. The expansion of the country house building industry has taken many persons out into the country who, not long before, knew of green fields only from the car window. Now one may not only learn to know the country and have all the comforts of modern conveniences in his own country home, but, which is much more important, he can learn to love it; and once loving it, is inevitably wedded to the soil.

There are many things that tend to bring about this condition, but few so charming and so comfortable as the porch sitting-room. To say that this is a necessary adjunct to every well-designed country home is but to repeat a truism. Those of us who have it know how true this is; those of us who do not have it spend not a few envious hours in wishing for one.

On the porch sitting-room one may live the country life in the most delightful manner. One's architect, if he has been wise, has left nothing to be desired. There will be spaciousness in width and spaciousness in length; for out in the open air one soon feels the crampiness of walls and narrow dimensions. Is a lawn ever too spacious for thorough enjoyment of outlook? So a porch sitting-room can seldom be too large, too ample in its area, too spacious in its physical form. Whether it be high or low is a question to be determined by the architecture of the dwelling; but here again, the utmost ampleness in dimension is an agreeable thing, and a useful one, helping in the creation of that outdoor effect which, after all, is the true end and aim of the fascinating outdoor rooms.

For rooms they are and true ones. Perish the thought of walls and windows as essential features in rooms! Let us leave such things for the drafty days of spring and fall, and hie ourselves to the open air, where, with only a wall to screen our backs and keep off unwelcome drafts, and with a roof to cover us from the rain or as a shield from the hot sun, give ourselves up to the unalloyed enjoyment of our porch sitting-room!

And so we bring on to it all sorts of things that may minister to our comfort, or which we think will do so. Of chairs there must be a plenty, of all sorts, shapes, sizes and kinds. Wicker chairs, of course, or wooden ones, for try as we may our porch furniture must meet with more or less exposure to the weather. Vastly comfortable is much of the modern porch furniture, vastly interesting too, and pretty to look at as well as conducive to long repose when one has once established oneself within their comfortable depths. Upholstered furniture is not always available for porch use, but is quite permissible if the porch be deep and broad, and if such pieces can be kept in thorough protection from the weather.

The furnishings, however, do not end with the chairs and benches; rather they only begin with them. There must be tables, too, and sometimes plenty of them. Just what kind and size of table we may use will depend upon the use that it is proposed to make of the porch sitting-room. Oftttimes a porch will be furnished as a dining-room, and then the dining-table becomes the most important article of furniture and may be as large as desired, or as ample as there is room for. The porch dining-room is, however, rather a special kind of porch, used for the most part, for this purpose alone, and quite more formal than the delightful informality that is one of the chiefest charms of the porch sitting-room.

Rugs should not be forgotten, and of these there are several kinds intended exclusively for porch use. Water or weatherproof rugs have a utilitarian advantage over those intended especially for house use, and seem to be especially available for the porch. The material, however, is somewhat independent of the question of use, since if one has a corps of servants, one or more of whom has especial charge of the porch, the care of such articles becomes a mere part of administrative detail. The main point in all this furnishing is that it be complete and comfortable, and this being the case the rug, be it made of what you will, is quite as important for the porch sitting-room as for any of the interior rooms of the house.

Then come the decorative features, and of these the plants growing in boxes or bowls or jars, are easily the most important. One may, indeed, be fortunate enough to have a vine-covered porch, which brings the foliage right up and on to the house. This is a charming form of household decoration, and when the design of the house and the planting scheme of the house grounds permit it should be developed to the utmost. Very lovely indeed are such vine-clad porches, and very lovely to sit within. But every porch column is not adapted to vine growth, and there are many delightful porch sitting-rooms as bare of vines as though such a form of plant never existed.

But the porch sitting-room is the natural meeting place of the house and garden. Such a porch naturally and by right overlooks the garden, for there can be nothing more unbearable than sitting on the "front" porch and watching the dusty procession of automobiles fly along the highway. One can not, indeed, sit exactly in the midst of a garden, for we poor human beings require various kinds and degrees of protection, and are seldom happy, when resting, without a roof above us. The porch sitting-room, therefore, naturally overlooks the garden, and that there may be no rude unbending line of demarcation between the house and the garden, we bring on to our porches some choice plant treasures, stand them in boxes or jars as handsome as we possess, and the work of arrangement is complete.

How far else one may go in furnishing these outdoor rooms is largely a matter of individual taste and the actual uses to which they are put. A tea-cart is often useful and is always quaint and charming. Of cushions and pillows there will be exactly as many as can be spared from the interior rooms. Electric lights, when the house is so illuminated, should not be forgotten, for there will be many occasions on which they will be extremely useful. The creatures that fly by night hardly render the use of porch lights available for evening purposes, but the power to light should always be provided and will be found of frequent utility.

Classic porch of pergola design

The generous comfort of the wide porch

An outlook on to the garden

Ornamental plants are favorite porch decorations

Trellised porch openings of original design

Rugs and curtains are necessary to porch comfort

The Porch Sitting-Room: A Group

A nautical porch

Porch and pergola combined

Wicker furniture is especially suited to the porch

A vine-clad porch

A hammock is often thoroughly at home

An agreeable place for early evening

f Pleasant Outdoor Resting Places

Classic porch of pergola design

The generous comfort of the wide porch

A nautical porch

Porch and pergola combined

An outlook on to the garden

Ornamental plants are favorite porch decorations

Wicker furniture is especially suited to the porch

A vine-clad porch

Trellised porch openings of original design

Rugs and curtains are necessary to porch comfort

A hammock is often thoroughly at home

An agreeable place for early evening

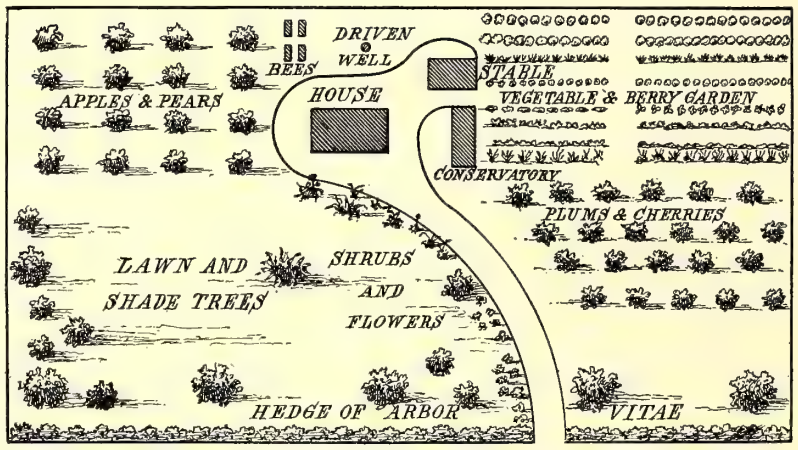
The Porch Sitting-Room: A Group of Pleasant Outdoor Resting Places

Creating a Small Country Home

By E. P. Powell

WHEN we have the right sort of common school education the boys and girls will be faced toward the land and land culture instead of away from it. The imaginative faculties will also be developed as surely as the memory and the mathematical faculties. Instead of a race of calculators and riches seekers we shall be likely to get a race of home builders. Everyone who undertakes to build a home will then be able to also plan it for the beautiful as well as the useful. He will foresee what he is about to make, and will be able to adjust himself to his surroundings. A home must, however, always grow, and can never be made out of hand. The business of a landscape gardener and of an architect is to help others to see for themselves and do for themselves, not to relieve them of either doing or seeing.

When you go into the country you are in search of something that looks attractive, and which you like to work at and make your permanent home. The first thing to do is to walk about such a place hand in hand with Nature, and let her talk with you. Do not bring too many notions and whims of your own—certainly not city-born views. After a while you will find that Nature has foreseen you, and that she has done a great deal in the way of getting ready for you. The very first thing for you now is to find out what is already done, not what is to be done. Here, says Nature, on this high slope is the place for your house. I knew you were coming a thousand years ago, and I carved out this mound with water, and have covered it fairly well with good soil. It is a commanding site where you will not only be free from malaria, but you can see the whole landscape—at least you can see enough to enrich your mind and charm your vision. That brook which comes down from the hills was intended for you to use in your garden, then to be bridged as it courses through your shrubbery, and finally, down there in the hollow you see, you can make a little lakelet of it, with rustic seats. I advise you to let it run directly through your cellar; to keep your cellar moist—not damp; for running water never causes mildew.



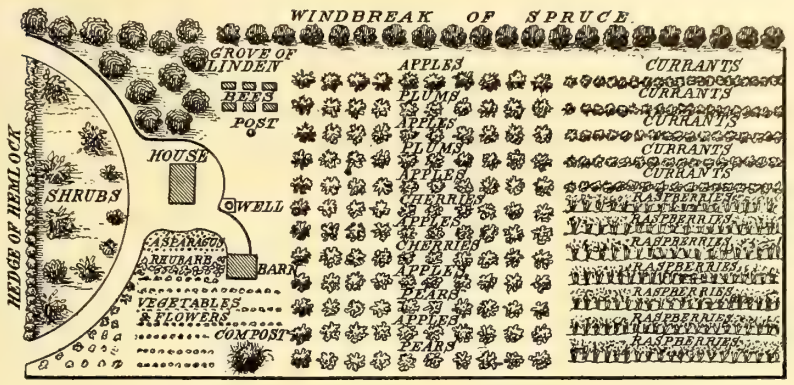
Sketch plan of a suburban homestead of one or half an acre

Now Nature will call your attention to the fact that your house is going to be quite a distance from the street, and that she intends you to have considerable driveway, and that all your drives must follow the lines she has prepared; either through the hollows gently scooped out, or winding around a group of trees. Anyway she does not allow you to build, as most do, close by the street, and she does not allow long straight paths and drives, not as a rule. Those who build on the roadside catch all the dust and the noise, and can have no real privacy of their own. Such people grow up as parts of each other; that is, bits of Tom, Dick and Harry.

Now, says Nature, I have fixed your land for you, and I have shown you where the drives come in easily; you must build your house for yourself. The fact is, I do not myself believe much in these piles of lumber and brick. My notion of a house is made up mostly of verandas, porches and balconies, with rooms enough inside to shelter one during storms. Rational human beings should live out of doors, where I have supplied a plenty of oxygen, ozone and sunshine. However, you are largely artificial in your makeup—(you call it civilized)—and will be sure to require a costly lot of carpenter work. I would not get an architect if I were you, for he will be sure to plan for you something that would stand just as well somewhere else. Now there is just one house that would stand here, and if you are cute enough and simple hearted enough you will find out what that house is. It will sort of grow over you and around you as you find out yourself. Stand right here, and look around; off there you have a superb valley, and you do not want a house that will not let that valley come in at the window. You will want that swell of trees, that remnant of original forest also visible. When you look out of your library or dining-room or chamber you will want all of these fine things looking in to greet you and inspire you and make character for you. A house that prevents all this is not suitable for a human being. Balconies and sun-bath windows, and such things will help to gather in all these fine things and make them a part of your indoor life. But remember this, my friend, if you get a box with holes in it, or an architectural display, and call it a house, you have made a big blunder.

Around the house I have arranged slopes, and you will see they are mostly easy and graceful. I positively forbid your grading and terracing, and other formalities, beyond the mere removing of roughnesses. You cannot beat my work for beauty and adaptability to your needs—not if you try. Right over there on that second knoll is the place for your

barn, and on the slope below it, as well as above it, is the place for your garden. At this Nature gives your arm a tight pinch, and wishes to know if you can see these things. Nature has only one text, and that is: "He that hath eyes to see let him see." Other people she turns over to their nonsense, and lets them build imitations of city houses out on the hillsides. There are lots of these affairs strung along the streets and stuck up for show. This is why Nature stops talking, and looks at you. She wants to know if you have imagination enough to see what you ought to create. There are some old apple trees in sight, and a grove of lindens. Those apple trees, says Nature, are old relics of the earliest white people when this country was full of Indians. If you trim them rightly they are good for a hundred years yet, so do not plan to cut them down. In that linden grove is the place for your beehives, and the bees will not only feed themselves from the flowers, but feed you. In this way, and in some others, Nature works at you to see if she can open your eyes to what she has already done to prepare for your coming.



Sketch plan of a four-acre homestead

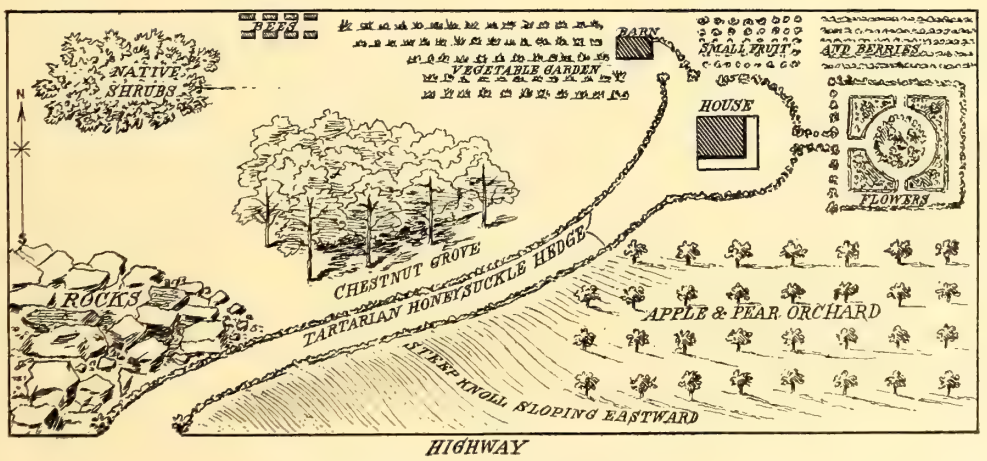
It is plain that you must not undertake too much at once. I know a lot of rich city fellows who are at work creating country homes. Most of them have spent a large amount of money in grading and leveling, and trying to carry out some Grecian ideal. One of them has a Greek portico behind a wretched lot of untrimmed apple trees, and his half finished ideas are scattered over forty acres. It will take him ten years to spite Nature, or at least flout all her notions, and get his own spaded into the hillside. My impression is very strong that this sort of home belongs either in a city or close by it. I found in Florida a ninety thousand dollar house built on a small lake, with every possible Philadelphia appurtenance, and surely the two things did not mingle. To make a home in the country means, at the very outset simplicity and naturalness. To make my view a little more distinct I propose to give you two or three plots, of grounds and houses, that are easily workable, and will not cost the owner all told over five thousand dollars. This sum will not be felt, provided the owner has the good sense to begin easy and make his home building a growth. Be sure that you will see a little better every year, and what you ought to do is to work out your advanced seeing in form. N. O. Nelson, the great co-operationist and town builder, gave me this compliment, the best I ever had: "Well, you have not only told others how to do it, but you have gone and done it yourself; or rather, you are always doing it."

My first chart supposes you to have happened on an old pasture lot where no one has ever before let himself go back to Nature. There are natural arbors made out of wild grapes and wild plums; Virginia creeper climbs over the stumps and trees; there is a big and rather tumble down stone fence, covered with bittersweet and mosses; and the whole affair looks down over a broad valley, and to the right it peeks through mountains into a blue distance. To the left you see a village, and far beyond that just the edge of a city. You will have neighbors enough in the distance, and there are catbirds and bluebirds not to mention goldfinches for more or less close companions.

They hop around and scold a little as we walk through the acres. The land rolls and pitches, but there is a fine plateau that rolls gently toward the roadway that winds down through an avenue of oaks. You found this spot when you were a boy and your city dreams have been of a chance to work and sleep right there. Where you would like to place your house there is a grove of chestnut trees, and scattered oaks and maples give a superb study of tree contour. We are going to have this place, and adjust ourselves to it, and it to ourselves. We understand that just as little as possible is to be done in the way of change. Even that group of sumach bushes must continue to show its crimson every fall. We could not improve it by digging up what Nature has planted, and placing instead spireas and lilacs. It will never do to cut the place up with too many drives and formal paths. In New England you will find a good many such places as this, where Nature's hints have been accepted and art has been avoided—or rather artfulness. Orchards crown the sunny slopes, and gardens are fondled in little rich hollows, while behind the house one slips naturally into shrubberies, made mostly of native shrubs, and the whole leading easily into some glen where the water runs and laughs and talks.

Not a few places in New England are so outlined with rocks and hills, by nature, that it is impossible for anyone to spoil them. We cannot superimpose artfulness to displace the simplicty and gracefulness, and in some cases the ruggedness of Nature's thought.

Most of my readers will, however, be compelled to content themselves with smaller and plainer places, generally not very far removed from town life—places where there is not much diversity, and probably neither rocks nor brooks and not much in the way of groves and knolls. We will visit a four acre homestead, six miles by trolley from a city of fifteen thousand people. It is nicely located for gardening, and the owner proposes not only to get a good share of his food from the soil, but to sell a snug surplus. I have watched his place grow, and have advised the owner from the outset. Here is the chart of it as it stands today, but the charm of it is that the plan is very flexible, and is modified according to the development of the owner's ideas.



A naturally planted country place

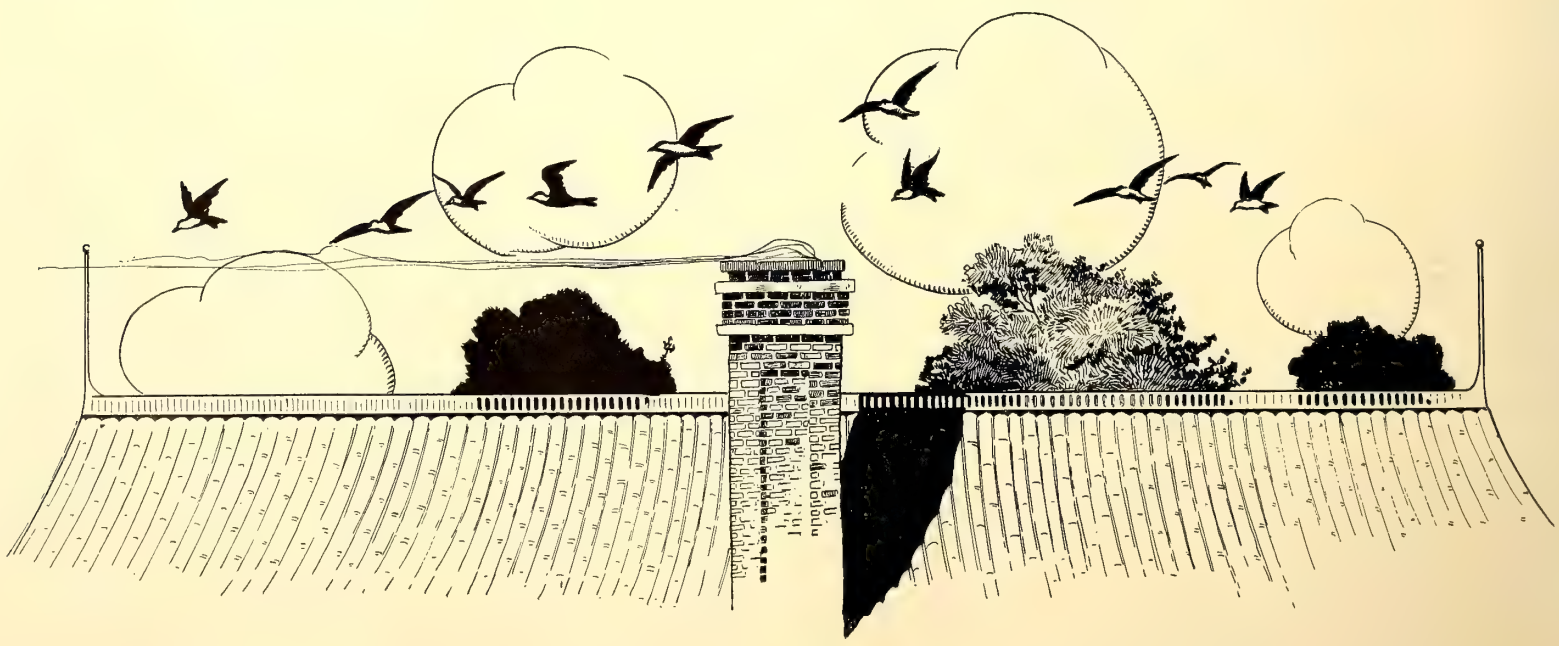
The whole, you see, is arranged in such a way as to save labor

as well as give heavy profits. The horse cultivator runs not only through the berry garden and the vegetable garden, but through a small plot of flowers, especially roses. The owner gets his home supply from these gardens, and sells as follows—that is, this is his record for 1908: Currants, 1,000 quarts, $100; cherries brought $50; plums, $50; raspberries, $150; other berries, $50; honey, $75; pears, $75; and apples, including cider and vinegar, $300 more. These are all rather moderate items; but if you summed them up they come to a tidy sum, not far from $1,000. His horse and cow are mainly fed by alfalfa cut from his orchard and lawns, while a small field of corn fodder adds largely to the milk product. He has, however, to pay one hundred dollars per year for additional hay and mill feed. His meat bill, beyond eggs and chickens, does not exceed fifty dollars per year; his hired help, besides his own boys and girls, is less than one hundred dollars; his coal bill is greatly reduced by tree trimmings, which furnish wood for five summer months. His house is supplied with electric lights, and he tells me that it will not be long before the same power will furnish him heat, beside doing most of his house and barn work. I believe he is right in this anticipation, and that we are not far from the day when our houses will be without chimneys, furnaces and ashes. There is no stint in this man's family, of fruits of all sorts and their free use; while honey is a staple article of daily food. The cow furnishes not only enough for the family, of milk and butter and cream, but adds her quota to the surplus of sales articles. If the family needs an outing, the quiet horse affords them an opportunity, through the lanes and by-ways, without cost or fare.

I ought to add a sketch for a suburban or village homestead, of a single acre or half an acre.

Let the drive follow an easy curve around the flower beds or among the trees, and, if there be a depression, follow that; or a knob or rock, drive around. In other words, try here as elsewhere to find out what simple directions Nature has to offer you. In these smaller homesteads do not make the buildings conspicuous with gaudy paint, and especially do not place them any nearer the street than is necessary. The first law of country life is a chance for retreat and retirement, and quite as important is it not to have the dust blowing over your trees and flowers and into the house. It is impossible to have comfort or beauty under such conditions. In the little sketch which I have offered I provide for the practical as well as the ornamental, and always have it in mind that a country place ought to pay its own way—at least after the few formative years. I have marked for bees and for a small conservatory, on the supposition that flowers may be raised for sale. Where this is not a paying business, it may be very well to have a surplus of roses, lilies and carnations to supply an extra demand upon the florists.

When I began this series on Making a Country Home I promised but three or four articles, but the evident need was for the five which I have given you. You are now well settled in a country home, surrounded by your gardens of all sorts and your orchard. You had time to secure pet animals, and to provide for their feed. If you think, however, that you have nothing to do but enjoy yourselves you will find out. By all means drop your city habits and adjust yourselves at once to those demands which Nature will surely make. My advice is that you get out of bed at daylight, and go to bed with the birds. City work is best done in the middle of the day; but country work can be best accomplished at the ends of the day, especially in the morning. Do not crowd your work, but take an adequate nooning. For this I shall expect to see about your place hammocks under the trees, and on the broad veranda. I advise you further to keep a memorandum of the things that are to be done, for if you do not you will never get what a Yankee calls "ahead." You will work off the ends of the memorandum, but that list of items will never grow shorter. It is the memory in your pocket; and its purpose is to save taxing the memory in your head. And now if you can never learn to find your joy in achievement, so as to make labor beautiful and attractive, you had better go back to the city, and content yourself with selling what other people have the wit and the grit to grow. But be assured the country life offers the most.



Historic Mansions of the Rappahannock River

"Sabine Hall"

One of the Famous Carter Homesteads in Virginia

By Edith Dabney

ON THE north bank of the Rappahannock River as one sails up the high-banked stream, lie the historic acres of Sabine Hall, one of the famous Carter homesteads in Virginia. While not an original grant, the Sabine Hall estate of two thousand acres is formed of several, including the Underwood and Fauntleroy tracts patented in 1650 and bought up by Col. Landon Carter in early 1700.

The father of Colonel Carter, Robert, known as "King" Carter, was the first of the name in Virginia, having come from England in 1649, and the son of John and Sarah Ludlowe Carter. "King" Carter's first wife was Judith Armistead, and the second, Mrs. Elizabeth Willis, daughter of Thomas and Mary Landon, of Grednal in the County of Hereford, the ancient seat of the Landon family. Of the ten children springing from this union Landon, the eighth, married first Elizabeth Wormeley, of Rosegill; second, Maria Byrd, of Westover, and, lastly, a Miss Beale; thus it is that the Carter name is so intermingled with the Fitzhughs, Berkeleys, Champes, Skipwiths, Nelsons, Lees, Braxtons, Randolphs, and many others equally distinguished.

The manor house of Sabine Hall, built on early Georgian lines, was erected by "King" Carter for his son in 1730, since when it has passed direct from father to son until two generations ago, when it would have reverted to a daughter, Mrs. Wellford, had she not died before her father, Col. Robert Wormeley Carter, who was succeeded in the ownership of the superb estate by his grandson, Mr. Robert Carter Wellford, the present possessor. A clearly emphasized fact is that throughout its existence Sabine Hall has remained in the possession of the original line of Carters, which is particularly gratifying, as in only too many beautiful old homesteads "some stranger fills the Stuarts' throne."

H. Landon Carter — Mrs. Carter — Councillor Carter

Painted by Sir Joshua Reynolds in 1749

FAMILY PORTRAITS AT SABINE HALL

The old-time gate keeper at Sabine Hall

The beautiful mahogany stairway

The approach to the estate is over a surpassingly lovely wooded roadway over a mile in length, canopied with white petalled dogwood and rosy laurel in the months of spring time, and a mass of brilliant color when the first frost comes to silhouette the red berried hollies against a background of winter snow. On reaching the brick lodge, with its great white gate, the stranger guest is treated to a picture of olden days in the keeper, an old negress with red bandana and courtesying manner, who lifts the latch to let one through.

From the lodge to the manor house stretches a thickly turfed park of twenty-five acres where oaks and sycamores, hickories and elms afford dense shade, and are lined with precision into a stately avenue showing nature at her most lavish and best. The landscape architecture of this winding driveway gives exquisite glimpses of the river flowing beyond, and just before reaching the lawn proper, branches to both right and left, joining again in front of the mansion, giving thus a dignified and easy entrance or exit around the well-mown circle.

The grounds, with their incomparable greensward, are adorned here with blue blossomed catalpa trees, or there with a group of maples, while dotted about in careless fashion are ashes and lindens, walnuts and oaks, venerable monarchs of an early forest. A giant sycamore lends its ample shade on one side of the house, rivaled only by magnificent ailanthus trees, the pride of the estate. On the land side these beautiful grounds slope gently to the wooded vales below, gradually losing themselves in the forest of many miles in extent.

Built on early Georgian lines, the brick originally laid in Flemish bond are now covered with a wash of gray cement

The Lodge gate at Sabine Hall

The river front is given over to the terraced gardens, where old-fashioned, box-edged flower squares, stocked and laid off in the quaint Colonial fashion, alternate with clumps of pure white snowballs and delicate lilacs or sweet-smelling calycanthus. Narrow prim and pebbly walks outlined with spring narcissus and early snowdrops, April cowslips or violet beds lead through and over the terraces which are separated from the lowlier kitchen garden by magnificent boxwood hedges unequaled in height and symmetry by any in the country. Planted there when America was very young, these marvelous hedges have fought the fires and strifes and wars of centuries, living to-day as they did in a time that is long since dead.

Rolling for nearly a mile beyond the fruitful orchards and garden terraces are the verdant fields and meadow lands which slope to the very river edge.

The bricks of which the mansion was built were made on the place, and while originally laid in Flemish bond, were washed with cement some generations ago and present now a soft gray tone which contrasts harmoniously with the white stone facings and dark green window blinds. A quaint one-story wing extends out on the left to which English ivy clings with the picturesque tenacity of years.

The stately portico on the land front of the double-fronted mansion is supported by four massive columns of the Tuscan

The river front of the mansion. The terrace gardens abound with old-fashioned flower squares and with a profusion of snowball and lilac trees

A portrait of "King" Carter by Sir Joshua Reynolds hangs in the great central hall

order, which in height equal that of the building. These columns are of hand-hewn solid cypress. The floor of the portico is flagged, as is that of the long verandah on the river front.

The massive entrance doors lead directly into a ten-foot hall which runs the depth of the house. This hallway, rich in paneling and carved wainscoting, is tinted in two shades of terra cotta, against which the choice mahogany furniture and rare old portraits show to the greatest advantage. The portrait hanging over the sofa placed near one end of the hall is of "King" Carter and boasts Sir Joshua Reynolds as its painter. Still another Reynolds masterpiece that hangs at Sabine Hall is of Councillor Carter, the brother of Landon, which was done during a visit to England in 1749.

Opening out of the hall on the right as one enters is the drawing-room, paneled from floor to ceiling, and further adorned by very beautiful cornices. The walls here are colored a soft French gray, while the cornices, door and window framework are painted white. In this room, in fact throughout the entire mansion, are bits of the furniture originally placed there.

The dining-room connects directly with the drawing-room, and for its charming, old-fashioned simplicity may be called the pièce de résistance of the delightful Colonial home. The unusual paneled walls are hung with matchless family portraits; the buffets and corner cupboards groan under a wealth of silver and plate, and the rare Lowestoft and willow ware have for centuries been the envy of those not so lavishly blessed.

But perhaps it is in the cheery library placed across the hall that one finds greatest interest, for treasured here are many rare books and historic manuscripts of Colonel Carter's time. Every inch of this room is filled with romantic associations; each nook and angle has its own particular story. In the library is the table, worn by time and hallowed by years, around which such men as Washington and Peyton Randolph often sat, seeking for council or enjoying their ease. If it is true that the greatest ornaments of a house are its guests, surely no mansion was ever more brilliantly adorned than Sabine Hall, the very name of which calls forth a procession of ghostly figures who once wined and dined, danced and slept under its broad, hospitable roof. Cherished among the most priceless possessions are autograph letters showing the names of Washington, Lafayette, Richard Henry Lee and other distinguished men of the day.

Every part of the library is filled with romantic associations

Watercress Culture in France

By Jacques Boyer

THE watercress (nasturtium officinale) grows spontaneously on the banks of shallow running streams. In former times the markets were supplied entirely with wild watercress, which was sometimes gathered at great distances, but this cruciferous plant, which possesses stimulating and blood-purifying properties, is now cultivated on a very large scale in the suburbs of large cities. This rather picturesque variety of gardening is conducted in trenches flooded with water, by a system which originated in the environs of Dresden and Erfurt, and was introduced into France about the year 1811.

The most celebrated watercress farms in France are situated near Provins, at the sources of the rivers Voulzie and Durteint, and at St. Gratien and its neighboring villages, near Paris. In establishing a plantation, the first operation is the excavation, in well-watered meadow land, of parallel trenches 150 to 250 feet long, eight to thirteen feet wide, with an average depth of sixteen or twenty inches, and a very gentle slope (1 to 800 or 1,000). Each trench is separated from the next by a strip of grass about a yard in width. The first trench is supplied with water directly from a stream or artesian well. On reaching the end of the trench the water flows through an underground tile pipe to the second trench, from the other end of which it flows through a similar pipe into the third trench, and so on. The water thus pursues a serpentine course through the field, its flow being regulated by gates at each end of the course. Experience has proved that a trench 150 feet long and ten feet wide requires twelve or thirteen gallons of water per minute.

The plantation having once been established, some cultivators confine their attention to renewing it occasionally by cuttings. They select young, vigorous shoots bearing adventitious roots and plant them in little bunches, with the dibber, in the trenches at intervals of from two to four inches. The earth is then heaped up about the shoots, and the trenches are flooded to a depth of two inches. The water level is gradually raised as the plants increase in height, care being taken to avoid submerging them entirely.

But if abundant crops are desired it is better to sow watercress seed every year. The old plants are raked off and the mud is removed with an implement which is called a rabot, or plane, and consists of a board fixed tranversely on the end of a pole. The dry bottom of the trench is next strewn with well-rotted stable manure, or with superphosphate of lime, each acre receiving about three tons of manure or nine hundred pounds of superphosphate. The beds are now ready for sowing. As the seed of watercress is very fine, an ounce containing more than 120,000 seeds and a grain more than 250, the sower stands on a board thrown across the trench and holds his hand as low as possible, in order to prevent the seed being blown away or distributed irregularly by the wind. Each year, as a rule, half the beds are re-seeded.

Two weeks after sowing, when the young plants are well

A watercress plantation

out of the ground, a small stream of water is admitted and the flow gradually and cautiously increased. At this time the importance of proper grading becomes evident, for if the trenches are not correctly graded the seedlings will be washed away from some places and accumulated in others. If the plants are distributed unevenly for this or other reasons it is a good plan to space them uniformly by transplanting five weeks after sowing.

Harvesting begins a month later, or within ten weeks of sowing, and continues throughout the year, except in the very cold weather, when the trenches are covered with straw to protect the plants from freezing. The harvester, wearing knee-guards to one of which a bundle of split osiers is attached by a strap, kneels on a stout plank laid across the trench and cuts the stalks, one by one, with a knife, following the direction of the current of water. As he gathers the plants he removes all dead leaves and forms the cresses into bunches, tied with osier, which he throws on the bank beside him. In spring a good harvester can gather 120 bunches in an hour, but in summer, when it is necessary to remove the flowers, he cannot accomplish quite so much, and in winter he is able to gather only about sixty bunches per hour. Even in winter, if the weather permits, the harvesters work from sunrise until three o'clock in the afternoon. In spring each trench can be cut once a fortnight, but an interval of twenty-five days is necessary in winter.

A small watercress bed

The bunches of watercress are carried in wheelbarrows to the washing shed, where they are again examined for defective leaves, washed in a large tank, and packed in oval baskets four feet high, each of which holds twenty dozen bunches. Each layer of bunches forms a single ring in contact with the side of the basket, leaving an open space in the center. Owing to this arrangement the cresses are not deprived of light and air during transit, and they reach their destination in good condition.

Washing and packing bunches of watercress

Fertilizers are applied to the beds after each cutting, and the roller is frequently drawn along the trenches for the purpose of rooting the plants in the soft mud. For the same purpose, and also in order to incorporate the fertilizer with the mud, the beds are beaten, after cutting and fertilizing, with a plank twelve inches wide and more than four feet long, attached perpendicularly to the end of a pole six feet in length. One of the photographs shows two men walking at the sides of the trench and performing this operation, which is peculiar to the culture of watercress. In winter a beater, with a perforated blade parallel to the handle, is used.

In large watercress farms it is customary to reserve the plants in one or more of the best trenches for seed, which is gathered in the latter part of June. Specialists in watercress distinguish two varieties, pale and dark green. The pale cress is the favorite. It has larger leaves than the other variety, but is less robust and more easily killed by cold.

At Provins cutting is suspended from the middle of May to the middle of August. During the nine months of harvest a trench 230 feet long, seeded annually, yields about 12,000 bunches.

Watercress can be raised on a small scale, for family use, without this elaborate system of trenches and without having a brook or an artesian well. It is merely necessary to dig a shallow pit in a well-shaded spot or on the north side of a hill, and to fill it with water. It is advisable, but not absolutely necessary, to cover the water with osier mats or wood netting. Cuttings of watercress are then strewn over the surface of the water. They soon take root and grow, and in three weeks the cress is ready for use. It is not necessary to provide a continual supply of fresh water, but the pit must be kept full of water and fertilizers should be strewn over it every three weeks. In this way an ample supply of watercress for a family can be obtained almost without expense. In cutting it is advisable to select the tallest plants, or some of those that are most crowded, thus admitting light and air to those which are left.

Another simple method of culture is recommended by Vilmorin-Andriaux. A trench ten inches deep, three feet wide, and of any length is excavated, preferably on the northern slope of a hill. The bottom of the trench is hardened by treading, and covered with a layer of rich soil mixed with leaf mold or compost which is gently pressed into a concave form. The bed is watered copi-

Cutting and bunching watercress

ously, allowed to dry, and sown, the seed being lightly covered with leaf mold applied with a sieve. The bed must be kept moist and a little leaf mold should be applied after each cutting. In this, as in all methods of culture, all weeds should be removed with the rake or by hand, and the plants should occasionally be entirely submerged for a few days, or sprinkled very copiously, in order to destroy insect enemies.

Watercress culture, in fact, save on a large scale, offers little difficulty and affords a crop readily grown and always available for table use. Its extensive cultivation calls for a somewhat considerable outlay, and some care must be taken to obtain the best results; but even in its most developed form it has few complications, and the crop yields are always ample.

In the towns mentioned it forms, as I have stated, a distinctive industry, a circumstance often observable in France, where the localization of industries, especially of farm or outdoor industries, are often highly developed and specialized in certain localities. The average visitor to Provins may well have an enjoyable time at this ancient town without so much as gaining any notion of the existence of the watercress industry or even so much as seeing it. Provins is, in truth, a place of the deepest interest. It is but ninety-five kilometers from Paris, and hence is within easy reach of the French capital. It consists of an old and new town, the former of which still retains the physiognomy of the Middle Ages, with most of its ancient walls and many old buildings of great historic importance.

Pressing down the roots which have been loosened in harvesting

A House Built for J. L. Johnson, Esq., at Hackensack, N. J.

By Paul Thurston

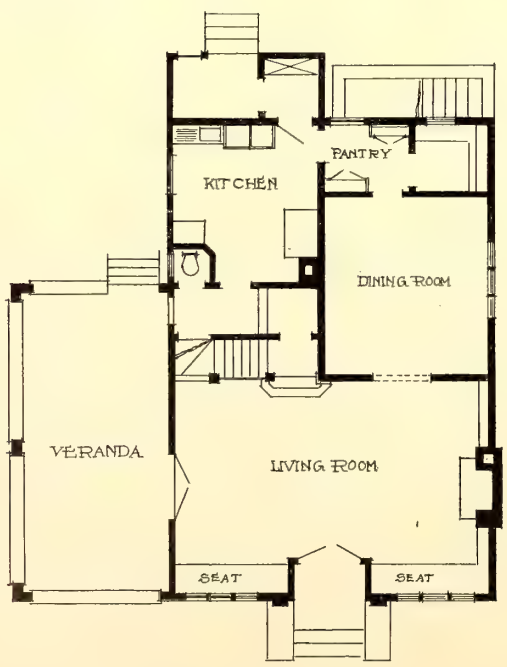
MR. JOHNSON'S house at Hackensack, N. J., illustrated on these pages, is a particularly good example of the "small house which is good." The site, in this case, is very fortunate, for it is on a high ridge of land, with a good outlook in all directions; and the lot, which is seventy-five feet in width, is sufficiently large to lay out simple and attractive grounds, and have the house stand sufficiently isolated from its neighbors to show off to its full advantage.

The key-note of the design is simplicity. The plan, as well as the exterior, gains its distinction by its rigid adherence to this principle. There is no front hall, the entrance door opening directly into the living-room, and the stairs ascending also from this room. The large piazza, inclosed by screens in summer and glass in winter, opens with glass doors into this living-room, and is heated and furnished the same as the rest of the house. Odd-shaped windows and projections of every description, such as bay windows, have been omitted. The exterior is covered with old-fashioned shingles, exposing twelve inches to the weather. These shingles are painted white, and the blinds, eaves, gutters and front porch pale green. The addition of green and white awnings, and very simple, but carefully planned planting, help the general effect of the house

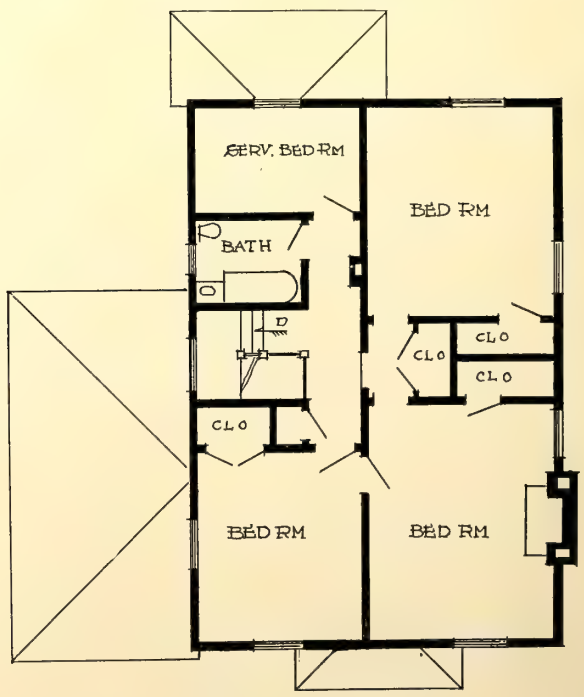
Wide clapboards are the chief feature of the exterior

The interior views show a very comfortable and livable arrangement.

A certain spaciousness is obtained



FIRST FLOOR PLAN



SECOND FLOOR PLAN

The floor space of the first and second floors is economically divided into rooms

in the living-room by the omission of the usual space devoted to the hall, thereby giving sufficient space for a grand piano or other large pieces of furniture, and to entertain comfortably a very much larger number of people than generally accommodated in the ordinary house of this size.

The living-room is treated with an ivory-white painted trim, while the walls are treated in a soft yellow tone blending well with the color scheme of the trim. Broad window seats are built in either side of the entrance, which have cushions upholstered in a dull blue velvet. The large open fireplace is built of red brick laid in white mortar, and is finished with a mantel of Colonial design. Bookcases are built in at either side of the fireplace and to the height of the mantel shelf.

Yellow and ivory-white is the color scheme of the living-room

The dining-room is treated with a blue and white color scheme

The dining-room also has an ivory-white painted trim, with wall treated in a delft blue. A plate rack extends around the room, on which are placed many old pieces of blue china of the willow pattern. A plain blue rug is placed on the floor and Arts and Crafts furniture of a soft brown finish is used.

A door from the dining-room opens into the butler's pantry, which is fitted with shelves, cupboards and dressers, while another door opens into the kitchen, which is provided with all the best modern fixtures, including the range and hearth, a sink, laundry tubs, and dresser. The lobby is large enough to admit an ice-box.

The second story contains four bedrooms, five large and well-fitted closets, and a bathroom. The last is furnished with porcelain fixtures and nickelplated plumbing. The various rooms are treated with a particular color scheme with white painted trim in all rooms. One of the front rooms has an open fireplace, with brick facings and hearth.

The house stands as an example of an extremely small and modest home, which has, by virtue of its extreme simplicity, a greater distinction than any of its much more pretentious neighbors, and is the work of Messrs. Mann & Macneille, architects of New York. The three photographs and plans that accompany this article illustrate the house in its most vital parts and present it in quite complete form.

Ants and Bees as Pets

By Percy Collins

IN RECENT years many persons have been hard at work with the object of making nature study simple and easy. They have foreseen that if it were possible to devote a few odd minutes at any time of the day to observing plant or animal life, and this without passing the door of one's study or sitting-room, thousands of individuals would gladly avail themselves of such a chance. In a word, the aim of these workers has been to bring nature, as far as may be, into the lives of those whose daily duties will not allow them to go to her. Of the wonderful success which has attended these efforts space will not permit me to write in detail. Suffice it to say that there are all manner of contrivances by means of which plants and animals of many kinds may be grown and reared in captivity, and this without any serious loss of time on the part of their owner. But perhaps the most wonderful inventions of this kind are devices for keeping ants and bees as pets. Thanks to the experiments of Avebury, Fields and others, it is now a simple matter for anybody who may be so disposed, to observe the ways of these insects.

Let us suppose that the reader wishes to keep under observation a colony of any small species of ground ant—say the little yellow field ant. A snug home may be contrived for the insects out of an ordinary photographic printing frame. The first thing to do is to weaken the spring clips somewhat, by bending, in order to ease the pressure when the frame is closed. The reason for this precaution will be apparent shortly. Now get two clear sheets of glass, half-plate size, and three narrow strips that will fit together between the big sheets as shown in the diagram. The thickness of these narrow slips is an important consideration. They must be just thick enough to allow an ant to crawl about between the two big sheets of glass. If they are thicker than this the ants are liable to pile up grains of earth, and thus obscure the view of their doings.

Now cut a notch in the side of your printing frame right down to the flange upon which the glass rests. Then put in the lower sheet of glass, arrange the three narrow strips upon it, and you will be ready to capture your ants, and transfer them to their new homes. This is more easy to talk about than to accomplish, and the reader will probably make one or two abortive attempts before he succeeds. Rapidity is the great thing.

Take your "cage" into the open, then stir up the ants' nest, and quickly transfer to the sheet of glass as many ants, larvæ, pupæ, etc., as you judge will be accommodated when the second sheet of glass is put into place and pressed down. This is most easily managed with a small spoon, and one must not forget to put in a certain amount of fine earth for the ants to build with.

As soon as these operations have been effected, the top sheet of glass must be put into place, covered by the back of the printing frame, and all clamped down. The formicarium (as the ants' cage is termed) is now to be supported in a shallow pan of water, so that when the ants come abroad they may be kept within bounds. No ant will willingly enter water, but they will pass down the little pathway, which should be provided for their use, drink, and carry moisture back to the nest for the use of the larvæ.

Between your sheets of glass you now have a mass of soil and ants apparently in hopeless confusion. But leave the formicarium alone for a few hours, and then take a peep at it. You then see that the confusion, though very marked at first, is really anything but hopeless. The ants gradually settle down to the new conditions of life in which they find themselves. They excavate chambers and passages in the soil—a vast chamber for the queen, if you have been lucky enough to entrap her majesty, and many smaller ones for nurseries. They collect together all the scattered grubs and pupæ they can find, sort them according to age, and begin at once to groom and caress them. They even contrive a special spot to be used exclusively as a cemetery, whither they convey the dead and hopelessly injured members of their colony.

In a very short space of time, in fact, confusion has given place to well ordered activity, and the ants go about their daily toil as though nothing out of the common had happened to them. And now the pleasure of your formicarium is manifest. The space between the upper and the lower glass is only just sufficient for an ant to walk about in comfort; so that in forming the galleries and chambers the ants are

Giving the ants their fortnightly supply of honey

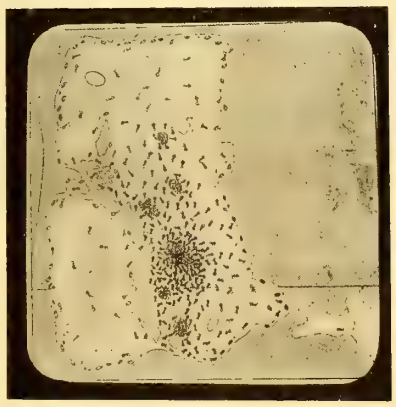
Administering moisture to the ants

obliged to make use of the glass as roof and floor. Thus their doings are plainly visible from without, and by means of a tripod magnifying glass their every action may be watched with perfect ease.

In contriving one of the handy formicariums, the springs of the photo frame must always be weakened, otherwise the pressure will prove too great and crack the glass. Much larger homes for ants may be made on the same principle, as shown herewith. In such cases it is best to cement the narrow slips of glass upon the large sheet which is to form the floor, thus forming a kind of very shallow tray, one opening, about an inch across, being left as the entrance. When the ants have been placed upon this tray, the upper sheet of glass is clamped into position with strong steel clips, and a wad of cotton is used to plug the entrance lest the ants should attempt to stray. In most cases, however, the insects will soon settle down happily in their new quarters, affording their owner the means of much pleasurable observation.

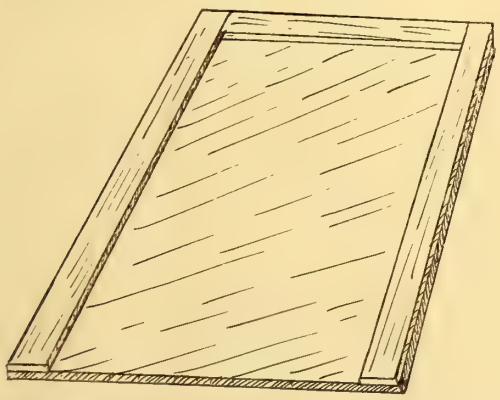
Studying bees in an observatory hive

But do not pet ants call for a great deal of care if they are to be kept healthy? The question is a natural one, and the answer will come to many readers as a surprise. For, despite what may be asserted to the contrary, pet ants require hardly any attention at all. Once a month, during the hot weather—perhaps once a fortnight when the atmosphere is very dry—the formicarium should be gently tilted, and about a teaspoonful of water poured into the nest —more or less according to its size. Afterward a little honey should be inserted, and then the cotton plug may be replaced. With this small periodic supply of honey and water the ants will be perfectly contented and healthy; while in winter they need nothing at all, for the cold weather renders them dormant and inactive.



Workers surrounding the Queen in the ants' nest

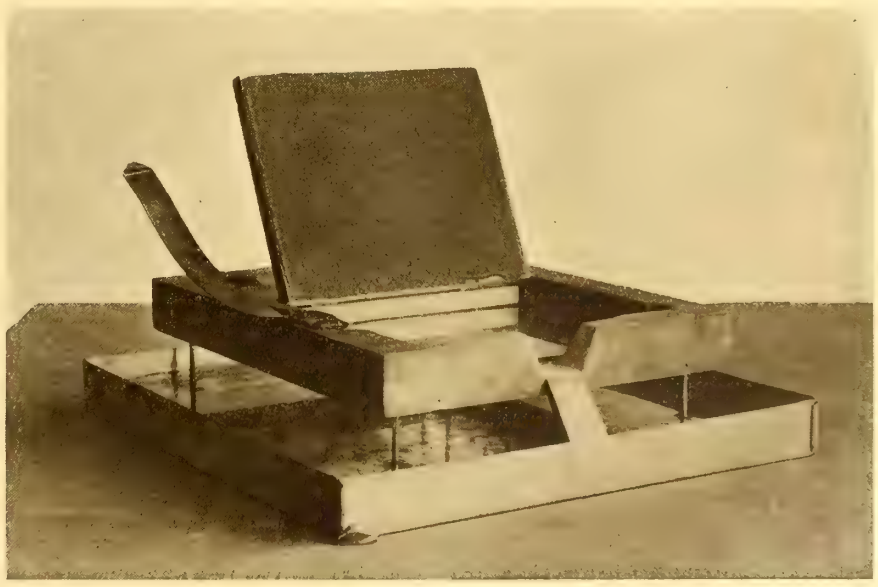
One thing, however, is essential for the well-being of these underground ants, and this is darkness. If left long in a strong light the little insects evince every sign of extreme distress, especially in regard to their young—the larvæ and pupæ—which they carry about from one side of the formicarium to the other in the hope of finding shelter for them. Therefore, when observing your ants do so as much as possible in a subdued light; and when not observing them be sure that the glass top of their home is covered. By this means you will add materially to the happiness of your ants, and they will repay you by thriving from day to day. Ants carefully tended according to the simple directions which have been given will live for years in captivity.



How the narrow strips of glass are arranged upon the lower or "floor" glass in impromptu formicarium

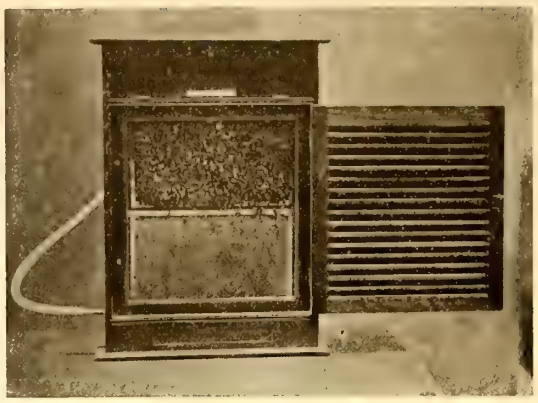
Pet bees are, if possible, more interesting than pet ants, while in keeping them one experiences the novelty of enjoying honey which one has actually seen being made. Bees may safely be kept in any ordinary room, upon a side table, provided they are housed in a small observation hive. Briefly, this is a diminutive hive, made to carry one, two or three of the regulation "frames," but with glass sides in place of the usual wooden ones. Darkness for the inmates is secured by means of blinds or screens when the bees are not actually under observation. But as bees must have liberty throughout the summer, and as it would be highly unpleasant to have them streaming through one's door and windows at all hours of the day, the entrance of their home is connected by a tube with a one-inch hole in the nearest window sash. Through this tube the bees go merrily to their labors among the flowers; through it they return laden with honey. So that by means of these observation hives one may witness the storing of honey, and all the intricate details of bee life, and yet never be stung, or in any way inconvenienced by the going and coming of the insects.

It will be quite possible for the reader, should he have a smattering of carpentering at his disposal, to construct an observation hive for himself, converting any old wooden box



A simple kind of formicarium

to this end. The necessary measurements of the regulation frames to be accommodated, etc., can be obtained from any handbook on bee keeping, while the same source will supply information on the subject of installing a swarm of bees in its new home. But unless the would-be student of insect life has already had some experience of practical bee-keeping on a large scale, he will do well to enlist the services of an established apiarist when he is ready to put bees into his observation hive—otherwise he may experience difficulties and dangers greater than he bargained for. Once the bees are established, however, they will give no further trouble, while they will prove a constant source of pleasure, and may become actually profitable. Even in big cities, where bees are restricted to the limited number of flowers to be found in window boxes, back gardens, and the ornamental beds of parks and open spaces, the insects contrive to collect honey in considerable quantity. This the writer can vouch for from actual experience. Then, too, the owner of an observation hive may try all manner of experiments on his bees, such as marking a bee with a spot of paint, and recording the number of hours which it devotes to labor each day. He may see, also, the cute way in which his pets accept a rank of artificial comb, stamped by machinery, and thus save themselves the weary process of wax making. To the writer this acceptance of aid offered by mankind appears to be among the most remarkable of all bee traits.

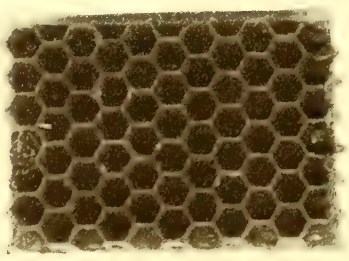


The observatory hive with door open

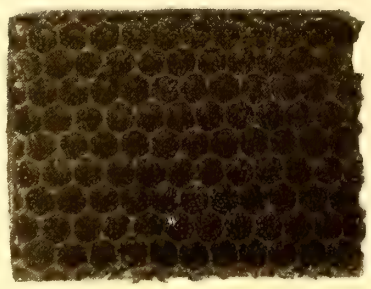
It may be said that it is quite possible to keep wasps in a roomy observation hive. They are fascinating pets, and afford infinite diversion by their elaborate paper-making schemes, by means of which the nest is enlarged and sheltered. But it is a very difficult matter to transfer a colony of wasps to a hive; and the reader will be well advised to refrain from attempting the task, at least until he has had some experience with bees, which insects are less fierce in disposition, and have less powerful stings.

While it is quite true one may obtain a substantial amount of honey from an observation hive, it is hardly to be expected that anyone will maintain these useful insects in this way for that purpose chiefly or alone. The honey one may take from these hives is, in fact, apt to be but comparatively small in amount, and quite a secondary product of the whole business. The merit of the observation hive is its exceeding interest and its wonderful mystery. Here there is no limit, and one may watch and study the busy little creatures for hours without really finding out what they are doing, or what is accomplished by their ceaseless movements. But the interest they excite is always present. There is always something going on. There is very much going on, and going on all the time. It is the mystery of insect life that excites one's interest in this wonderful activity, with the added interest that you know that a definite insect product is being manufactured immediately under your eyes, a product, perchance, for your own delectation.

I have written of these two curious forms of insect life and told, in a very brief way, how they can be maintained on the library table or at any convenient point within the house, because the love of animals seems deeply ingrained in the human heart. And I submit that no animals can be kept with less trouble than ants and bees. If, at first blush, it may appear a bit strange to look upon these curious creatures as pets, the notion falls away immediately, I am sure, when the ways of keeping them, and the easy means of observation that may be provided are made known. One may not, indeed, be prepared to take the ants and bees out of their strange homes and fondle them, but one can always watch them, always study them, always learn something from them.



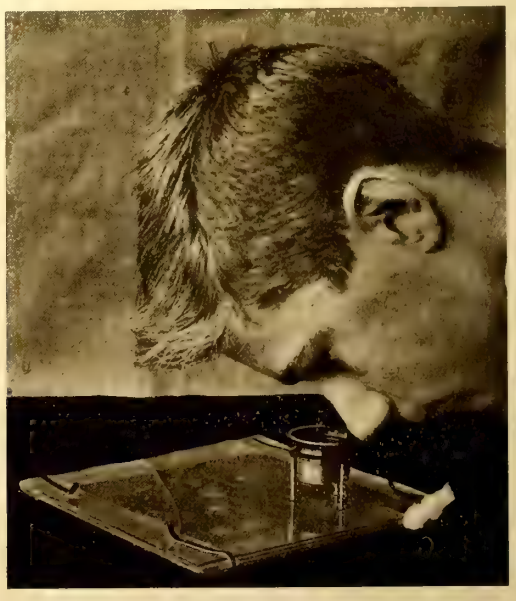
Artificial comb made by machinery



Comb made by bees

No other form of animal life may be kept within the house so neatly and so readily. Practically no care is required. The keeping places or houses are, to all intents and purposes hermetically sealed, and one has but to roll up a curtain or lift a cloth to have all the mysteries of the insect's private life displayed for all who may wish to view them. And this is something accomplished. Many interesting forms of animal life can not be maintained within the house because the creatures are unpleasant or their care involves too many difficulties. But the ants and bees will flourish everywhere, and may everywhere be objects of interest.

The ants' nest. The plug of cotton seals the only entrance



Examining captive ants in the formicarium

"Penllyn House," the Residence of Arthur King Wood, Esq.

Ardsley-on-Hudson, New York

By Francis Durando Nichols

"PENLLYN HOUSE" represents an excellent example of the English villa house, and Messrs. Ewing and Chappell, of New York, who designed it, have made a very successful attempt to reproduce the character of its prototype and carry it out in this particular style of architecture. The situation of the house is fortunate, for it has enough ground around it to allow a good scope for the efforts of the landscape gardener.

The estate is not a large one, but all of it is under cultivation. The rear of the building is shown in the illustration, and the covered porch as well as the terrace, over which an awning is hung in summer, faces the south and is so arranged that the view extends over the garden which is planned to be laid out at this part of the property.

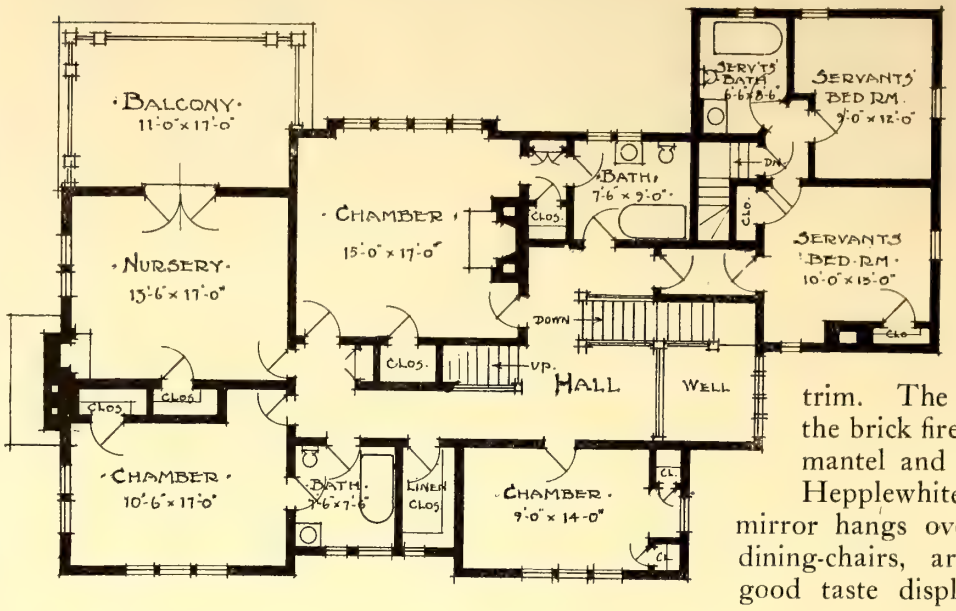
The entrance to the house is reached direct from the street, with a walk leading to the vestibule. This walk is bordered on either side by a hedge which returns near the street line and extends along the boundary of the property. The exterior of the house is covered with a cement gray stucco, while the trimmings are of chestnut and finished with a soft brown stain. The rails are painted white. The roof is covered with shingles and stained a brilliant red. The many-pointed gables and the chimneys with their chimney pots are characteristic of its style. A careful study of the plans will convey a better idea of the interior arrangement and it will show the entrance to the house, which is placed quite differently from the entrance to the usual house, for it opens into the side of the living-hall. This great living-hall is trimmed with cypress. In common with the white richness of the interior decoration, the woodwork is finished in Flemish brown, darkened as with age, bringing out the soft grain of the wood. The walls are in a brown mortar finish, with rough surfaces and are tinted in colors.

The hall has a unique staircase, which is recessed in a broad landing, from which the stairs to the second story ascend. This broad landing is lighted effectively by a great window extending up to the third floor and glazed with leaded

A gray stucco exterior with brown chestnut trim

glass. Dull blue denim curtains are hung from a pole extending across from the top of the windows, with excellent effect. Japanese lanterns and tables, old brass candlesticks and pots complete a harmonious furnishing of the hall. An attractive vista is obtained from the hall, through the den, to the living-room.

The den is fitted up with bookcases built in, willow furniture,

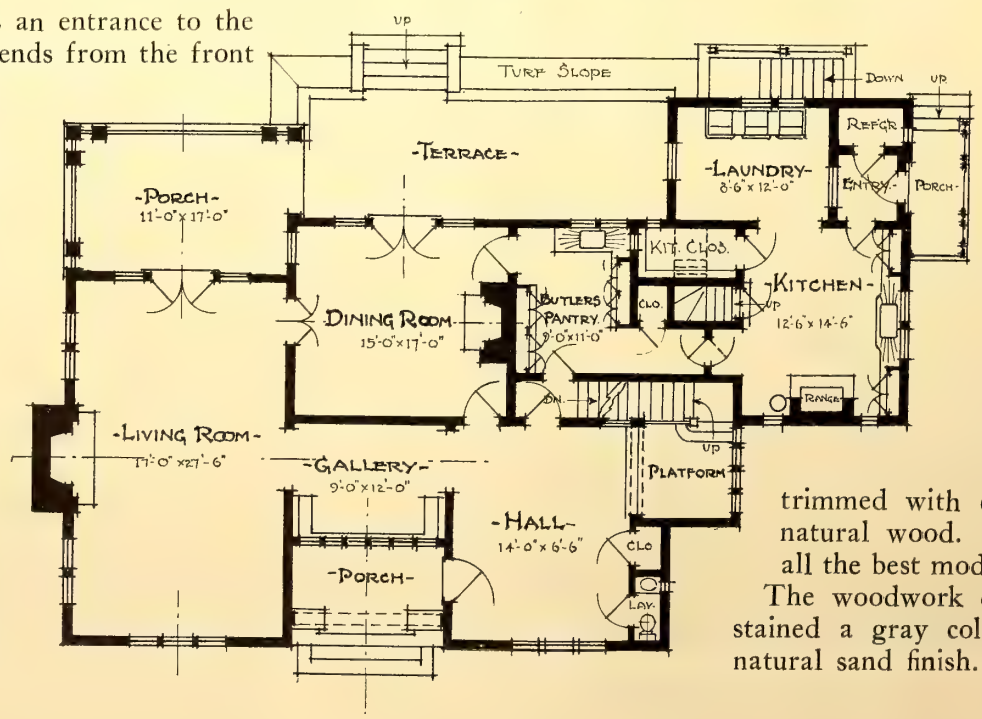


with an over-drapery of turkey-red cloth. Similar material is used for the furniture covering in summer. Sliding doors open from the living-room into the dining-room, which has also another entrance from the hall. It is finished with a white painted trim. The feature of the room is the brick fireplace, with its handsome mantel and paneled overmantel. A Hepplewhite sideboard with mantel mirror hangs over it, and Hepplewhite dining-chairs, are characteristic of the good taste displayed in furnishing the

Picturesque roofs, gables and dormers

and a desk. It forms an entrance to the living-room; which extends from the front to the rear of the house, and is exposed on three sides; the rear having two glass doors which open on to the covered porch, from which broad vistas are obtained of the garden.

The side wall is divided by a great open fireplace with brick facings and hearth, and a massive mantel and overmantel extending to the ceiling. Thin muslin curtains are hung at the windows



house. The exposed side of the room has French windows opening on to the terrace, which is frequently used for dining uses in the warm weather. From the dining-room a door opens into the butler's pantry fitted with a sink, drawers and dressers. Another door opens into the kitchen, which is trimmed with cypress finished in the natural wood. This kitchen contains all the best modern conveniences.

The woodwork on the second floor is stained a gray color, and the walls are natural sand finish. This floor is divided

into bedrooms, consisting of the owner's suite of two rooms and bath, and the two guest rooms and bath. The owner's rooms have an open fireplace with tiled facings and mantel. The bathrooms have porcelain fixtures and exposed nickelplated plumbing. This floor also contains the servants' quarters and bath, which are placed over the kitchen extension and are reached from a private stairway from the kitchen.

The third floor is devoted to an open attic, which is fitted up with a stage for amusement purposes. A heating apparatus, fuel rooms and cold-storage space is provided in the cellar.

The windows and glazed doors of the living-room

The interior decorations of the house, including the furnishings, wall decorations, hangings and rugs of each room, have been carried out to maintain an effect of harmony in color throughout the house.

The merits of this house should be apparent to every reader. First and foremost, it is picturesque in design. It is an orderly picturesqueness, if I may use the phrase, for, while the silhouette offers a varied grouping of gables and roofing, it is, on the whole, thoroughly well ordered and carried out with marked restraint. But the picturesque exterior is directly derived from the picturesque plan, the success of which is the foundation of the success of the whole. Thus the entrance is effected by means of a porch that stands at the base of a recessed wall. This, in its turn, is buttressed by two projecting wings, each of which has its own gable, which, being merged into the bolder lines of the main roof, give an immensely picturesque effect to the entrance front.

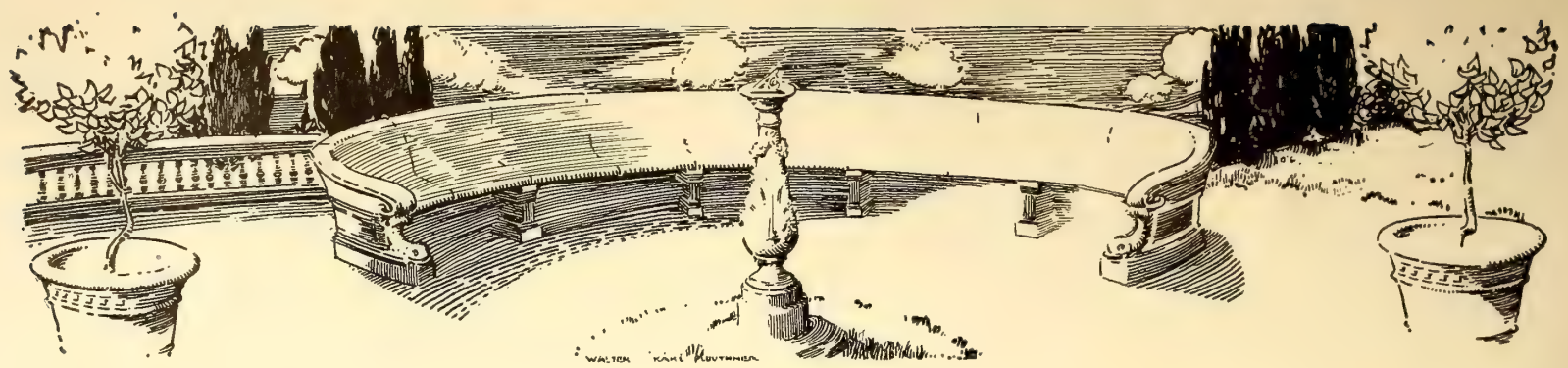
The plan is developed in a most interesting way. Directly in face of the entrance passage or gallery is the dining-room, overlooking the terrace on the inner front. On one side is the living-room, which, as has been said, occupies the whole of one wing of the house. On the other side is the hall, with the staircase in one corner arranged in a projection built between the main structure and the kitchen wing. The latter is articulated with the main part by means of a passage and butler's pantry. The kitchen wing, with the kitchen and laundry below and the servants' bedrooms above, is, indeed, a service wing of quite generous dimensions, and while frankly expressing what it is in the reality, is thoroughly in harmony with the generally picturesque quality of the whole.

One need, indeed, scarcely to advance further to discover the chief excellencies of this delightful house, for these two points, the plan and the exterior treatment, cover the most essential aspects of good design in home building. But the photographs of the interior and the brief descriptive notes relating to it show that, in every aspect, the house has commendable qualities, qualities the more marked and the more striking because here given such straightforward and apparent character.

The scale of the house is, within its specified limits, of the most generous description. The rooms are ample in size; they are disposed in a broad way, and are arranged so as to produce an agreeable effect when seen within, either separately or en suite. The terrace and porch on the interfront are, moreover, real expansions of the house, and not only add to the available floor space for living purposes, but help very materially in the picturesque character of the exterior.

The recess staircase of the hall

The dining-room is finished with a white painted trim



Garden Notes

The Best Twenty Annuals for the Flower Garden

ASTERS.—Grow from 1-2 feet high and should be planted a foot apart, not mixing colors in the same bed. There are endless varieties and colors. They are in bloom from late August until killed by frost. Peony Flowered, Comet and Late Branching are good forms. The best flower there is, in its season, to cut.

CENTAUREA.—Bachelor's Buttons grow 2-2½ feet high, rather straggling, but its blue flowers lasting from July to frost makes it very serviceable. Plant 8-12 inches apart.

COSMOS.—A tall plant (6-10 feet), with single flowers in pinks and whites. Blooms from the first of September to frost. Plant two feet apart and stake.

ESCHSCHOLTZIA.—California Poppy, 12-18 inches high and has a profusion of pale-yellow, golden and white flowers throughout the summer. Gray foliage deeply cut. Plant 10 inches apart. Charming and valuable in the garden because of its color.

MARIGOLDS.—In three or four species are handsome plants. The African variety is three feet high, and the Dwarf French 12-18 inches, the colors are yellow or brown, the flowers single or double. Deep green, fragrant foliage. Plant 1-2 feet apart. Not very nice in the house, but its brilliant masses are indispensable in the garden.

MIGNONETTE.—A straggling plant 1-3 feet high, grown for its delicious fragrance. Planting seed in May and July should give a succession all summer.

MIRABILIS.—Marvel of Peru, Four-o'clocks, grow to two feet high. The flowers are white, pink or red, and open in the afternoon and fade before morning. Plant 18 inches apart.

MYOSOTIS.—Forget-Me-Not, a low sprawling plant, but a charming and profuse bloomer, as everyone knows. M. dissitiflora is the best, but M. palustris is the common variety.

NASTURTIUMS.—Perhaps our best known and most valuable annual. Grows in the poorest soil. Its fine foliage (like the lotus) and charming flowers make it indispensable. Dwarf or climbing. Beautiful growing and one of the best flowers to use in the house.

PANSIES.—Familiar in many varieties. A low plant blooming profusely in spring and fall, and sparingly through the summer. The horned pansy (V. Cornuta) and the tufted pansies should be tried. Plant six inches apart.

PETUNIA.—Height, two feet. Much variety in color and form. They are single, or very double with frilled edges, in white, pink, maroon, and magenta shades. A continuous bloomer. The single flowers in solid colors are the best. Plant 12-18 inches apart. Useful for cutting.

PHLOX DRUMMONDI.—Ten to twenty inches high; clear and brilliant colors. Blooms from June to frost. Colors, pink, white, red, and pale-yellow. Plant 8-16 inches apart.

PINKS.—Twelve to eighteen inches high, bloom from July to frost. Fragrant and lovely flowers in many varieties, including Marguerites, Chinese pinks, Heddewigi pinks, and Sweet Williams. Plant 6-12 inches apart

PORTULACA.—A low spreading plant which looks much like Pusley, but bears large and brilliantly colored flowers in many shades. Useful in dry places in full sunlight. Sow the seed where they are to remain.

POPPY.—Twelve to twenty-four inches high. Well-known, fugacious flowers in many shades of red and white. Shirley is a good strain, and the old fashioned tulip poppy is a favorite. Plant six inches apart or scatter seed in early spring where they are to bloom. They bloom early and are gone by the middle of July.

SWEET ALYSSUM.—A low plant covered with white flowers throughout the season, which is useful for edgings.

VERBENA.—Eighteen to twenty-four inches high, bearing large, flat bunches of flowers of brilliant color, white, pink, purple, red, and blue. Very useful for cutting. Plant ten inches apart.

SALVIA.—Two to three feet high; is a blaze of scarlet throughout the summer. Not good in the house, and too brilliant for many situations, but will lighten a dark corner. Plant 18 inches apart.

ZINNIA.—Height, 2-3 feet. Colors, bright scarlet, rose and orange. Useful in mass in the garden. Plant 18 inches apart.

NICOTINIA.—Two or three feet high. Sweet scented white, or in a variety of colors. The white is much the best. This is the last annual to be killed by the frost. Plant 18 inches apart.

The Best Seed Bed for Annuals

All the above annuals should be planted at the same time, in a specially prepared seed bed.

A cold frame is a good thing, because it is well drained and the soil is in good condition, but in lieu of that, four boards, about a foot wide, can be nailed together, making a sort of box without bottom or top. This is set on the ground and filled six inches deep with finely sifted soil, which is compacted as it is put in. The surface of the seed bed should be about half a foot above the soil outside, for the sake of drainage. The seed are sown in rows; the rule is to cover each seed with earth equal in thickness to the diameter of the seed covered. With fine seeds this means simply a sifting of earth after they are sown on top of the ground. When the planting is finished the whole bed should be covered with a frame on which cheese cloth has been stretched. This will keep the air damp and prevent the surface of the ground drying while the seeds are germinating. When the seeds have sprouted, however, the cover should be taken off in the day time, and not put on tightly even at night, unless there is danger of a frost. Watering the seed bed should be done carefully and never over done. Better too little water than too much, which, without sufficient ventilation, causes "damping off," or death from a fungus disease due to an atmosphere overcharged with moisture.

It is much better to delay planting until the first week in May to have plants which are hardy and strong, and which will grow fast when set out.

When the seedlings are old enough (2-3 inches high) they should be transplanted to their permanent beds. An old three-tined kitchen fork will be found the handiest tool for this pricking off. If it is done in damp weather the seedlings will need no protection, but if the sun comes out strong they should be shaded for a few days with shingles stuck in the ground, or with cheese cloth frames.

Beans should be planted in the driest and hottest part of the garden, in soil which has been well manured the year before, and which now, before the planting, may have a dressing of ground bone and wood ashes, ten pounds of each to a square rod.

The soil should be thoroughly prepared before planting, and after the seeds are up should, should be walked on and cultivated as little as possible, as the bean seems impatient of any interference with its root system. Weeds can be destroyed by shallow hoeing.

The planting should not be done until warm and settled weather is expected, the rule being to plant beans when the apple blossoms are falling. Plant string beans in rows two feet apart, putting the seeds about three inches apart in the rows, thinning to six inches when they are up.

Bush limas should be in rows four feet apart, one foot apart in the row.

Pole beans should be in hills four feet apart each way, with three vines to a pole.

The best varieties of beans are: Mammoth Stringless Greenpod, Stringless Refugee Wax, Dreer's Wonder Bush Lima, Dreer's Improved Pole Lima.

The Sieva, or small lima, is a delicious bean, and is preferred by many to the ordinary lima bean.

CORRESPONDENCE

The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

By Alice M. Kellogg

Author of "Home Furnishing: Practical and Artistic"

MAKING A PIANO COVER

"THE top of my upright piano," writes R. E. J., a Philadelphia subscriber, "looks very bare to me. In asking at the stores for a spread or scarf of some kind I find nothing that is ready-made. Would it be possible for me to make a cover? If so, will you kindly give me particular directions? I can sew well, but I have never seen anything of this kind, and would not know whether to have it cover only the top of the piano or hang over all around. Is a lining and an interlining necessary?"

Another inquiry on the same subject comes from an Indiana correspondent, who wishes especially a piano cover that may be laundered.

Making a piano cover

Replying to both of these letters this department would suggest buying a strip of material in as handsome a pattern, and as good a quality as may be afforded. If the cover must be washed from time to time, a piece of Japanese wash silk could be used, and with this lightweight material it would be well to allow six or eight inches to hang down at the front and sides. Or a piece of ecru-colored linen may be embroidered in white floss, with the edges hemstitched. If a heavy quality of brocade or tapestry is to be made up, a pattern in paper should be first cut exactly the size of the top of the piano. The brocade may then be turned under two inches all around and an antique gold braid sewed on the right side along the edges, making a neat turn at the corners. A lining of silk, in a plain color, may then be sewed on the under side. With a thin material for the cover, an interlining of canton flannel may be used, but with a substantial kind of goods this will not be required.

COMFORTABLE BEDROOM CHAIRS

E. K., of Harrisburg, Pa., writes: "What chairs are suitable for bedrooms? Whenever I make a visit I like to spend some of the time in my room resting, as I am not very strong; but I never find a really comfortable chair to sit in. Now that I am about to fit up a guest room in my own home I want to have the right things, and the chair problem is puzzling. Please give some idea of prices."

Upholstered chairs of good shape and well made as to the interior materials, with durable coverings, cannot be bought for less than twenty-five or thirty dollars. A Colonial rocker, mahogany frame on simple lines, with upholstered back and detachable seat cushion, costs about twenty-six dollars. A wing, or fireside, chair costs about thirty-five dollars. In comparison with these prices one may turn to the handmade willow armchairs, with hair seat cushions, which cost from twelve to fifteen dollars. Rockers may be added to these chairs, if desired. In a single guest room one comfortable chair will be needed, and in a double guest room two armchairs should be supplied.

FURNISHING A COTTAGE FOR RENT

"Would you give me, through your Home Furnishing Department, some ideas that would help to make a cottage attractive for renting? I have not seen any suggestions for this specific need, but I am sure there are others of your readers besides myself who will be benefited by some hints."—F. S. Maine.

The owner of a cottage that is to be rented must keep in mind the general taste that is to be suited, rather than his individual enjoyment. If there is much competition to meet in the neighborhood, it would be a good investment to put extra expense to make the furnishings distinctive. Wall decorations make, perhaps, the quickest appeal to a prospective tenant, and with such charming varieties now on sale every condition may be met.

Avoiding the hackneyed floral bedroom papers, with roses or poppies lavishly sprinkled on a white ground, one may select instead an ivy design for a sunny room; a morning-glory trellis for a room of small size; lilacs or sweet peas to give interest and unusual coloring. Or, departing entirely from patterns, there are dimity, chambray, and homespun effects, in soft light tones, with flower borders already cut out and ready to paste under the picture molding below the ceiling.

Papers that are too plain require an outlay in pictures to make the walls inviting, so the dining-room may well be treated with a landscape wall paper, if it is printed in artistic tones. In the living-room a two-toned paper may be the background for some of the colored prints that have taken the place so satisfactorily of the old-time chromos.

For the cottage floors there are some new

(*Continued on page xiv*)

Garden Work About the Home

By Charles Downing Lay

FORESTRY

IN REPLY to T. McL.'s question: Forestry is the science of growing trees for the sake of their product in lumber and firewood.

It is purely commercial, and does not in the least consider the appearance of the forest or any of its parts. It has, however, the ethical beauty of all careful methods as compared with the old slip-shod, wasteful ways.

Whatever ulterior benefits may come from economical handling of the forest, such as the conservation of water, or a supposed influence on the rainfall, are not sought by the forester, but are only extra reasons for the state to pursue good methods in the care of the forest.

There is no doubt that forests do make the flow from streams more regular and tend to prevent floods, and this may well be taken into account by the state, but for the private owner, the only justification for money spent on forest management is the direct money returns which may be expected. The forester looks upon the forest as the farmer does upon his field of potatoes, a crop to be harvested as soon as it is ripe, with the least cost and the greatest economy of method. If the crop is poor he wants to know why and how it can be bettered, how the yield may be increased in order to bring in more profits.

This necessitates the study of arboriculture, just as the farmer studies agriculture. It means a study of soils, of climate, of adaptability of species, of the market value of different varieties, of diseases, insect pests, and of methods of handling the crop, and of preparing it for market.

But farming and forestry differ in this way, that with farm crops all the individuals ripen and are harvested at the same time, and are planted together the following spring, whereas in forestry only a few parts of the crop are harvested each year, and the replanting goes on continuously.

Most people can tell when a field of corn is ripe and ready to cut, but it takes the skilled forester to know exactly how and when to cut the trees of the forest.

A definite amount of lumber is grown in the forest each year, and we must know if the growth is as great as it should be, and whether we are cutting now more than the annual growth. If we are we shall get ahead of the forest, and the time will come when no cutting can be done profitably for a long period of years. The income is not only deferred for those years when no cutting is done, but is decreased if in that time the growth of the forest is wasteful, as may happen.

Whether the method be to cut, say, one acre of a hundred acre plot every year, or to cut one hundredth of the trees every year, so that in a hundred years the forest will be renewed, does not concern us now, only the fact that we must provide for its renewal in a definite time.

(*Continued on page xiv*)

Problems in Home Furnishing

(*Continued from page xiii*)

rugs that can be made in several shapes and sizes, the bungalow, and an imitation of the Scotch rug, and some new weaves in the cotton or rag rugs. Fiber rugs are light in weight, and clean-looking. A single large rug is the best choice for the living-rooms, and small-sized rugs for the chambers.

Furniture for a cottage that is to be rented is a difficult problem. Some new kinds of porch furniture, made after the Colonial lines, is suitable also for the interior. Made with rattan seats it is light enough to be easily changed from one place to another. A Morris chair, made on plain lines, is a good selection for the living-room, and one or two chairs for children may be included in the outfit.

On the porch a swinging settle may be provided, or a canvas hammock with a wind shield at the back. A kitchen settle, that can be turned into an oblong table of good size, is also recommended.

A SUBSTITUTE FOR BURLAP

"In the house I am building, in a suburb of Boston," writes T. C. E., "I am using in the dining-room a chair rail, about four feet from the floor. In the hall there is a semi-paneled wainscot; that is, there are upright spaces left in the woodwork in which some kind of wall covering is to be fitted. I had thought of using burlap until noticing in your descriptive articles on houses the names of other materials. Will you kindly suggest something for my own use?"

Burlap has been so commonly used that new coverings have lately been devised to take its place. These show a rough weave, or raised effect, and some have a metallic finish. Japanese grass cloth and Japanese leather paper are not novelties, but each year there are different colorings and patterns. For the hall of this correspondent a Japanese leather paper in dull, copper tones, would be interesting if it suited the upper wall. In the dining-room the new Hofi cloth is suggested, in one of the wood tones that is like the finish of the woodwork.

COLOR SCHEME FOR A VIRGINIA HOME

The wall colors for a southern home is asked for by F. D., of Virginia. "The house faces east. The parlor and dining-room are connected, and are on the northern and northwestern side, both well-lighted. A wide hall is carried through the house. The living-room and library are connected, and are on the eastern and southern sides. The hall has mahogany furniture, which needs recovering. What is the best coloring? The parlor rugs are small Oriental ones, in old pinks, browns, and greens. I also must have a new furniture covering here. The library and living-room have walnut furniture. I need new rugs for these two rooms. I am especially anxious about the wall decorations."

Taking the hallway as the keynote of color, and lacking much direct lighting, an orange-colored paper, printed in two tones in a small pattern, could be used. The mahogany furniture may be covered with green-and-blue tapestry, in the small, set designs that are in use now. In the north parlor a warm buff-colored paper, in satin finish in a flowered effect, may be chosen, and in the northwestern dining-room a figured paper, showing predominating tones of yellow. One of the English patterns is especially good for this exposure. The library and living-room, having the sunny outlook, may have one of the brown texture effects in one room and a green and blue mixture in the other, according to their setting of woodwork. The heavy wool rugs, made in this country in Oriental patterns, would suit these rooms. For the furniture covering in the parlor there is a linen damask in a small pattern, at $4.50 a yard, that would harmonize with the rugs and wall-paper.

Garden Work About the Home

(*Continued from page xiii*)

It is for the forester to determine the period of renewal, and to plan for the yearly cuttings, fixing the size and number of treeh to be cut, selecting the varieties which are to be encouraged and those which are to be weeded out. He must provide for the reseeding of the forest by leaving seed-bearing trees of the desired varieties, and seeing to it that the surroundings give proper conditions for the germination and growth of the seeds.

The forester must also study the market, and know what sizes and qualities of lumber are most valuable. Shall the small saplings be cut for cord wood or puddling poles, or allowed to grow large enough for railroad ties? Are ties more profitable than spiles? what by-products can be saved to pay expenses?

The arrangements for getting the lumber out of the forest are important, whether they be roads to streams or railway connections.

The greatest waste in the forest to-day is that of fire, which is far larger than the waste due to careless lumbering, for a fire not only injures the present value of the timber, but may burn out the soil and destroy its future value.

The forester himself should be extremely careful and conservative in his plans and estimates for the future, because he may never see the full results of his labor, and he should leave his successor, who may be called in at any time, in five or ten or twenty years, in no doubt as to his intentions, or of the basis for his deductions and plans.

The reforestration of barren parts of small farms is not only a paying thing, but, in this case, has the added value of protecting the soil from erosion, shielding good meadows from the winter winds, and, in such indirect ways, increasing the productivity of the farm.

The forest as property seems excellent. The income should be regular, and might even increase slowly, and if we never see the fruition of our plans we may rest assured that a growing forest has a definite value, which a proper survey will show.

The fire risk is becoming less and may some day be eliminated. The price of lumber is advancing faster than that of labor, who knows how much greater the proportion may be?

Some states encourage reforestration by remitting taxes, as in Connecticut, where lands growing 1,200 white pines, six feet high, per acre may be taken from the tax list for twenty years.

There are many books and pamphlets on forestry, but the best is Gifford Pinchot's "Primer," Published by the Bureau of Forestry of the United States Department of Agriculture.

REFORESTING WASTE LAND

In the northeastern states, white pine is the most valuable forest tree for box boards and lumber, but for cord wood one of the oaks should be used.

Seedling pine trees, two years old, can be bought for $10-$12 a thousand. They should be planted five feet apart, or 1,700 to the acre. Planting costs $4.00-$4.50 per thousand, or about $8.00 per acre. They are planted with a mattock. A sod is first taken up, then the mattock is stuck in the exposed earth, twisted to make a hole, and the tree put in. May is the best time for this work. At forty years the pine will be ready to cut for box boards, and should produce $150 per acre.

Red oak seedlings, two years old, can be bought for $20 per thousand, and planted for about the same price as the pines. The red oak will grow well mixed with the pines, though I think such mixed planting is of doubtful advantage.

The oak can be sold for cord wood, spiles, staves, etc. It is hardly likely that it will bring as high a price as the pine at forty years. There may be local conditions which will make its growth more profitable.

Seedlings for forest planting can be grown very cheaply, and there is great advantage in having them on the place when they are needed, but for a small job it is better to buy them.

OILING ROADS

A correspondent in Connecticut asks about oiling roads.

The term is a loose one and is indiscriminately applied to roads which are really oiled with petroleum, to roads which are roughly sprinkled with tar, and to roads which are impregnated with a hot tar or asphalt, which acts as a binder.

The latter method is the best, and, for the best results, should be done when the road is built. The hot tar is spread on top of the road after it has had one dry rolling on the top course. The tar is brushed in as it is spread, sprinkled with screenings, and rolled. A road so treated will outwear any ordinary macadam road twice over, and will be nearly dustless.

Sprinkling an old road with tar is a barbarous custom. While it is wet and sticky the road is almost impassable, and because it cannot be spread evenly on the dust some spots get more than others, and the road wears unevenly.

Sprinkling with petroleum is not much better.

The best way to oil is to make an emulsion of the petroleum, and sprinkle the road lightly with that many times. There will then be no pools of oil, no soft place in the road, and no dust. This treatment will have to be given two or three times in a season, but it is not expensive.

Sprinkling with a solution of calcium chloride, which is hydroscopic, keeps the surface damp, and hence dustless. It is an excellent way to treat a dirt or macadam road when the traffic is light, and dust an objection. Although the calcium solution will probably have to be applied more often than an oil emulsion, it will be much cheaper than plain watering, and is a treatment especially adapted to replace the old way of having a watering cart lay the dust for an hour or two twice a day.

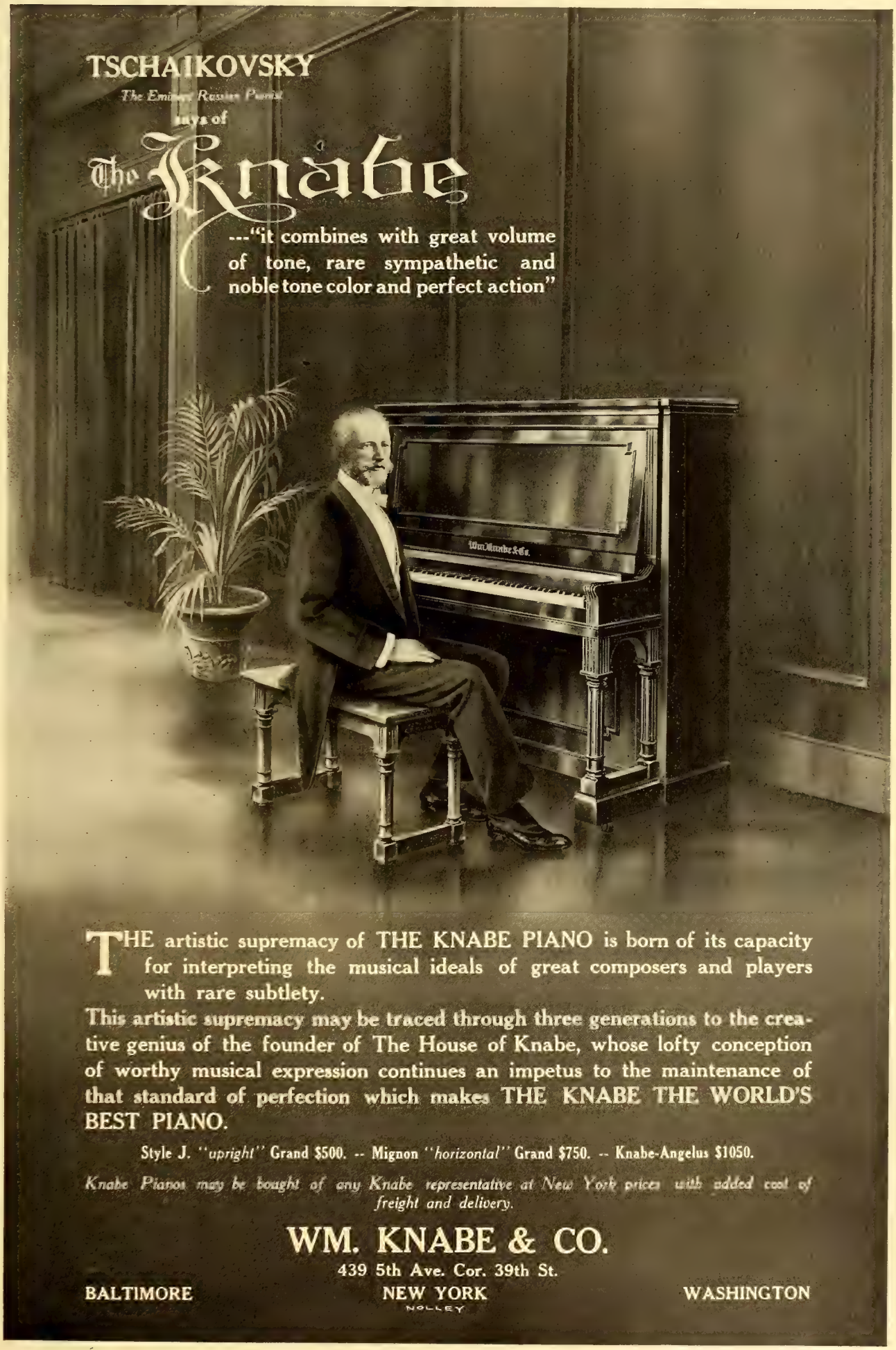
THE BEECH

The American beech (Fagus atropunicea) is a lighter green than its English relative, and it is lighter, too, in effect, just as the American elm is a more graceful tree than the robust English elm.

The beech has a compact and regular head, and when grown in the open branches near the ground. The bole is large, smooth and delicately modeled, and the silvery gray bark, mottled and spotted with lighter patches, looks particularly well in winter against a background of dark pine trees. The branching is irregular, and the sprays taper gently to the cigar-shaped buds.

The beech casts a dense shade, and for that reason, as well as because it is shallow rooted, grass seldom grows under it. In a grove this does not matter, for there the beeches make their own soft carpet of light-yellow or brown leaves.

(*Continued on page xxiii*)



THE artistic supremacy of THE KNABE PIANO is born of its capacity for interpreting the musical ideals of great composers and players with rare subtlety.

This artistic supremacy may be traced through three generations to the creative genius of the founder of The House of Knabe, whose lofty conception of worthy musical expression continues an impetus to the maintenance of that standard of perfection which makes THE KNABE THE WORLD'S BEST PIANO.

Style J. *"upright"* Grand $500. -- Mignon *"horizontal"* Grand $750. -- Knabe-Angelus $1050.

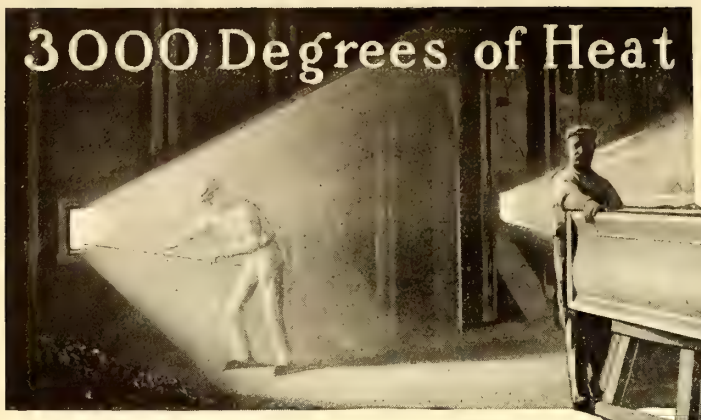
Knabe Pianos may be bought of any Knabe representative at New York prices with added cost of freight and delivery.

WM. KNABE & CO.

439 5th Ave. Cor. 39th St.

BALTIMORE NEW YORK WASHINGTON

NOLLEY



and the material it perfects

WHEN choosing bathroom fixtures, study *material* as well as *design.*

The ideal fixture must be pure white to be beautiful It must be hard as flint to resist stains and scratches. It must be absolutely smooth in order to be easily kept clean. These three qualities—whiteness, hardness and smoothness were never successfully combined until the advent of Imperial porcelain ware.

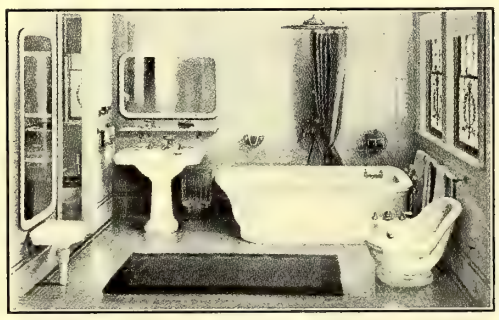
MOTT'S PLUMBING

Mott's Imperial and Vitreous Solid Porcelain bathroom fixtures are molded by hand, then given twelve coats of china finish and glaze and finally placed in kilns that are fired to a temperature of 2,500 to 3,000 degrees. There they remain for 10 days, the body and glaze gradually *uniting,* and the surface developing a durable beauty that belongs to the ideal fixture.

The china-white finish of Mott's Plumbing fixtures will not stain or scratch, is non-absorbent and requires only light wiping with a cloth or sponge to keep it spotless.

In addition to Imperial and Vitreous Porcelain, a full line of Mott's fixtures is also made in high-grade porcelain enameled iron. Our book "Modern Plumbing" gives a full description of each of these wares and shows how they may be appropriately used. There are 24 illustrations of model bathrooms ranging in cost from $85 to $3,000.

"MODERN PLUMBING" will be sent on receipt of 4c. to cover postage.



THE J. L. MOTT IRON WORKS
1828 *EIGHTY YEARS OF SUPREMACY* 1909
FIFTH AVENUE AND 17TH STREET
NEW YORK CITY

BRANCHES
Boston, Chicago, Philadelphia, Pittsburgh, Detroit, Washington, St. Louis, New Orleans, San Francisco, San Antonio, Atlanta, Seattle and Indianapolis. Canada: 83 Bleury Street, Montreal

White Frost Refrigerators

SAFEGUARD **the health of the family.** More than 50% of disease can be traced to unwholesome wooden Refrigerators, which cannot be kept clean. The **"White Frost" is all metal,** not a splinter of wood about it, can't rust, warp, leak, decay. Enameled spotless white, inside and outside. No nasty corners for dirt or germs to lodge. Has revolving, Removable Shelves. May be washed out in a minute. It is always clean. **Keeps food pure and sweet,** by natural refrigeration. Economical of ice. **Money back if not satisfied.** Send for free book telling about the most **perfect sanitary Refrigerator in the world.** ¶ We will sell you one at trade discount, freight prepaid to your station, if your dealer does not handle them.
METAL STAMPING CO., 528 Mechanic St., Jackson, Mich.

Dear Bob, buy me a White Frost Refrigerator

The reason why Old English is the best wax
FOR FLOORS, FURNITURE AND ALL INTERIOR WOODWORK
is because it is the "highest quality" wax made. Suitable for hardwood or pine floors—never flakes nor becomes sticky nor shows heel-marks or scratches. Send for FREE SAMPLE of

Old English Floor Wax

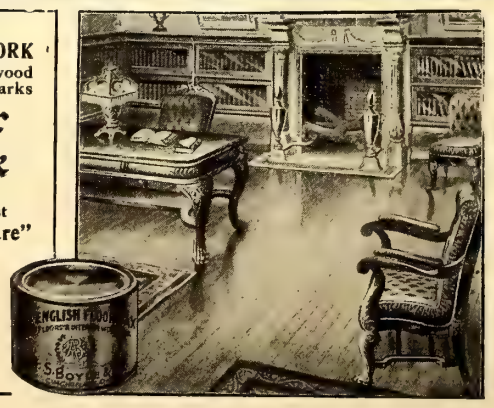
"The Wax with a Guarantee"

And if you wish to learn how to make floors beautiful, request
Our Book—sent free—"Beautiful Floors, Their Finish and Care"

IT DISCUSSES:
Cleaning and Polishing Floors.
Finishing New and Old Floors.
Care of Waxed Floors.
Finishing Kitchen, Pantry and Bath Room Floors.
Finishing Dance Floors.
Removing Varnish, Paint, etc.

Buy Old English from your dealer—50c. a lb.—1, 2, 4 and 8 lb. cans. One pound covers 300 square feet. Write us anyway.

A. S. BOYLE & CO., 1913 West 8th St., Cincinnati, Ohio
Manufacturers of "Brightener"—which *keeps* floors clean and bright.



THE WATER SUPPLY OF THE COUNTRY HOME

By George E. Walsh

THE water supply problem for the country home located beyond the range of any storage reservoir of town or city has been variously solved by individuals, and to the prospective builder it is important that proper consideration of the subject be given in advance. Hand pumps and wells are primitive methods of obtaining drinking water, but they have their use in thinly populated regions. The great drawback to these is the danger of contamination from surrounding sewage unless they are dug far down below the sub-stratum of soil so that the sewage is purified before it reaches the springs. A well sunk through impervious strata to a depth of ten or more feet should not be contaminated by surface water, and if properly inclosed by a protecting hood dust and dirt will not drift in. A well sunk through sand is generally a poor one unless carried down to a great depth, for the water is apt to be of bad quality and very uncertain in the supply.

The nature of the soil and the action of surface water should be understood before a well is located or dug. Rain water sinks into the surface soil until it strikes an impervious stratum, and then it flows over this to a level, or, as is often the case, to a pocket, which it fills. In time it overflows from this pocket and forms a natural spring. Such water is apt to receive much impure drainage from surrounding watersheds. If a well in the country is dug only to such a well-filled pocket, the drainage from the barn and kitchen sink may be daily served up in the drinking water. Many so-called unfailing springs of pure, cold water are nothing but catch-basins for impure surface water and drainage.

If we cut through this impervious stratum and strike the lower springs we have a pure, uncontaminated supply, provided the sides of the well passing through the impervious stratum are made tight. The walls of a well should be made perfectly tight so that the upper springs cannot leak through. The walls should be made of brick or stone, and the joints cemented carefully so that they are made water-tight. The importance of using good cement and plenty of it in the construction of the walls can not be overestimated. The masonry work can not be intrusted to any except responsible men. It is a good plan to line the inside of the brick or stone walls with a good coat of cement so that a smooth surface can be had all the way up. This increases the protection and makes cleaning easier. A well dug and fashioned in this manner is a good insurance against disease.

The covering of the well is something that admits of considerable artistic treatment, but the protective feature should not be neglected for the artistic. A well hood and sides are primarily to keep out dirt and dust, and if the outside is to be covered with vines and plants the covering should be of such a character that leaves and flowers can not fall into the water. A good well may thus be made a most artistic feature of a country home, and on many estates we find the old-fashioned stone or brick well kept in prime condition for pure drinking water and for artistic treatment.

A water supply for the house service can be arranged simply and economically by constructing a tank to catch the rain water. In most parts of the country the rainfall is sufficient to provide the average house with all the water needed for washing and for one flush closet. The size of the storage tank determines the amount of supply always ready. It is not a satisfactory arrangement to put up a barrel to catch rain water, for the largest bar-

MENNEN'S
BORATED TALCUM TOILET POWDER

"Baby's Best Friend"

and Mamma's greatest comfort, **Mennen's** relieves and prevents **Prickly Heat, Chafing and Sunburn.**

For your protection the **genuine** is put up in **non-refillable** boxes—the **"Box that Lox,"** with **Mennen's** face on top. Sold everywhere or by mail 25 cents—*Sample free.*

Try Mennen's Violet (Borated) Talcum Toilet Powder--It has the scent of Fresh-cut Parma Violets. *Sample free.*

GERHARD MENNEN CO., Newark, N. J.

Mennen's Borated Skin Soap [blue wrapper] Specially prepared for the nursery.
Mennen's Sen Yang Toilet Powder, Oriental Odor
No Samples

Sold only at Stores.

"You choose the colors—
Thread & Thrum Rugs
we'll make the rug."

Thread and Thrum RUGS

Different from all other rugs, made in colorings to match your decorations. Special styles to go with Mission or Fumed Oak Furniture. Wool weft, seamless, heavy, reversible and durable. All sizes up to 12 feet wide and any length. Sold by best shops in principal cities. If your dealer does not keep them, write Arnold, Constable & Co., New York, for Color Line and Price List.

THREAD AND THRUM WORKSHOP, Auburn, N. Y.

UNION METAL COLUMNS

FOR PORCHES AND PERGOLAS
Will not *split, check* or *rot*
Dignified classical designs. Made entirely of metal, in all sizes up to 40 inches in diameter. Finish to match any wood perfectly. *Stronger* and more *durable* than wood.
Last Longer Cost No More
Write now for Booklet "F-5" describing
UNION METAL COLUMNS
Patented
The Union Metal Mfg. Co.
506 Clifton St., Canton, O.
We ship everywhere

FREE REX FAMOUS COMPLEXION POWDER
THE KING OF ALL BEAUTIFYING POWDERS

It is absorbent and non-irritating, and may be used where other powders are impossible. It will enhance the beauty of the most perfect complexion and render less apparent the defects of the poorest. It is endorsed by the leading professional and society people, and we guarantee every package to give perfect satisfaction. To further introduce this wonderful powder we make this special offer to you. Send us the names and addresses of ten ladies and 10c. in money or stamps to cover charges, and we will send you prepaid a sample package of **Rex Complexion Powder,** a sample jar of **Rex Scientific Beauty Cream,** and our handsome illustrated **Beauty Book.** This handsome book is 32 pages and cover, and complete in detail; telling you how to preserve your beauty and create new charms. **Rex Scientific Beauty Cream** is without a peer, we positively guarantee that it contains nothing that will produce or encourage the growth of hair or down on the face. It has more body and is a better working cream than any other cream manufactured, and will not turn rancid. By dealing with us you are guaranteed satisfaction; we will promptly return purchase price if any of our articles are not perfectly satisfactory to the user. Address

REX BEAUTY SPECIALISTS, Dept. C
290 E. 43d St., Chicago, Ill.

FIFTY FOUR YEARS OF QUALITY
WOLFF'S PLUMBING GOODS

"Guaranteed"

Architects are cautioned that there are many guarantee labels being used on porcelain enameled iron plumbing fixtures, and that in accepting a ***guaranteed*** tub, it will be the part of caution to identify the firm issuing the guarantee label as to financial responsibility and record of having made good, in a broad way, all that a guarantee label both states and implies.

The WOLFF GUARANTEE is fifty-three years old, and during that time has made a reputation for itself unique in the relation of a manufacturer to his product.

The cost of tearing out and replacing imperfect plumbing fixtures is so great that a guarantee label must have a broader meaning on plumbing equipment than on any other branch of building equipment. The guarantee label that is not backed by reputation and undoubted financial responsibility is indeed an empty statement.

L. WOLFF MANUFACTURING CO.

Manufacturers of

PLUMBING GOODS EXCLUSIVELY

The only Complete Line made by any one firm

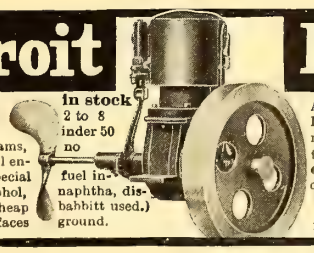
DENVER CHICAGO TRENTON

Showrooms: 91 Dearborn Street

BRANCH OFFICES:

615 Northwestern Building, Minneapolis, Minn.
Builders Exchange, Cleveland, Ohio.
1209 Scarrett Building, Kansas City, Mo.
Monadnock Building, San Francisco, Cal.
77 Richmond Avenue, Buffalo, N. Y.
1108-1122 Nicholas Street, Omaha, Neb.
327-328 Bond Building, Washington, D. C.

2 H.P. Detroit Engine $29.50



Other sizes at proportionate prices ready to ship. Single cylinder engines, 2 to 8 h. p.; double cylinders 8 to 20 h. p.; Four cylinder 50 h.p Engines start without cranking. No cams, sprockets, only three moving parts. All engines counterbalanced. No vibration. Special jector burns gasoline, kerosene, coal oil, alcohol, naphtha, distillate. Plastic white bronze bearings (no cheap babbitt used.) Crankshaft drop forged steel. Bearing surfaces ground.

In stock under 50 no fuel in-

Adjustable steel connecting rod. Waterproof ignition system. For your launch, sailboat, rowboat, stern wheel boat, or railroad track car. 20,000 satisfied users, free catalog and testimonials. **Demonstrator Agents wanted in every boating community.** Special wholesale price on first outfit sold.

DETROIT ENGINE WORKS
1206 Jefferson Ave. DETROIT, MICHIGAN, U. S. A.

That Bungalow
which you intend to build this Spring will need the soft, artistic tones of

Cabot's Shingle Stains

to make it harmonize with its surroundings

They are for shingles and all other exterior woodwork, and preserve the wood thoroughly from decay and insects. 50 per cent. cheaper than paint, 100 per cent. handsomer, and any intelligent boy can apply them.

Send for samples of Stained Wood and Circulars. Free

SAMUEL CABOT, Inc., Sole Mfrs.
131 Milk Street, Boston, Mass.
Agents at all central points

A. H. Kipp, Architect, Wilkes-Barre, Pa.

THE GREENHOUSE IS A NECESSITY

It has become just as essentially a part of the country place as the garage or the stables. The growing of bedding plants for the grounds, and the housing of palms, to say nothing of the flowers and vegetables it produces, make it a necessity to every country home.

The ornamental way in which we are handling these houses makes them one of the attractive features of the grounds.

Our illustrated matter, showing various houses we have designed and erected, will be mailed to you for the asking.

Hitchings & Company
1170 Broadway New York

A New Place to Shoot and Fish

Temagami
Northern Ontario, Canada

—a new territory now reached by rail—the country of the canoe, the camper's paradise.

Fish for black bass, speckled trout and lake trout—the gamiest fish that swim. Shoot moose, deer, bear, partridge and other game during the hunting season.

Bring your camera—the scenery is wild and magnificent.

In this pure, pine-perfumed air, hay fever is unknown.

A booklet telling you all about it, handsomely illustrated, sent on application to

G. W. Vaux, 917 Merc. Loan & Trust Co., Chicago
F. P. Dwyer, 290 Broadway, New York
E. H. Boynton, 360 Washington St., Boston
W. Robinson, 506 Park Building, Pittsburg

G. T. BELL, G. P. & T. A.
Montreal
W. E. DAVIS, P. T. M.
Montreal

Accurate information regarding THE WORLD'S INDUSTRIAL PROGRESS is a necessity of MODERN BUSINESS LIFE, as well as a subject of ABSORBING INTEREST for every thinking man and woman.

For nearly sixty-five years the

Scientific American

has been the most widely quoted authority on all matters relating to the progress made in the fields of discovery, invention and scientific news.

Free from dry technicalities, it tells the story of the WORLD'S PROGRESS in a fascinating and practical manner, which makes its weekly visits welcome to the entire family. It is unique among periodical literature because it contains authoritative information which cannot be obtained from any other source.

Subscription price, $3.00 per year.

The Season's Best Club Combinations

Scientific American or American Homes and Gardens	$3.00	
Review of Reviews	3.00	
	$6.00	**$4.45**
Scientific American or American Homes and Gardens	$3.00	
Review of Reviews	3.00	
World's Work	3.00	
Everybody's Magazine	1.50	
	$10.50	**$6.80**
Scientific American or American Homes and Gardens	$3.00	
Everybody's Magazine	1.50	
World's Work	3.00	
	$7.50	**$5.35**
Scientific American or American Homes and Gardens	$3.00	
McClure's Magazine	1.50	
Review of Reviews	3.00	
	$7.50	**$5.35**
Scientific American or American Homes and Gardens	$3.00	
World's Work	3.00	
Delineator	1.00	
	$7.00	**$5.10**
Scientific American or American Homes and Gardens	$3.00	
McClure's Magazine	1.50	
Woman's Home Companion	1.25	
	$5.75	**$4.60**

After February 1st, 1909, 25c. must be added to combinations including Woman's Home Companion.

MUNN & CO., 361 Broadway, New York City

rel is not sufficient to keep an ordinary house supplied during a dry season. A tank 6 by 4 by 6 feet, copper lined, and substantially constructed, will hold water enough to furnish all the needs of a small family in our ordinary summer weather. A larger one would make the supply practically inexhaustible in any weather. The cost of such a tank and piping for a sink and flush closet may range from $75 to $150; but if properly designed the water question is solved.

The objection to a rain water tank in our cold climate is that in the winter there is danger from freezing. In the summer it answers the purpose satisfactorily. If the tank is built over the kitchen extension this can be avoided. A plan is to leave the rafters of the kitchen exposed with openings around the water tank. The ascending heat from the kitchen range will thus always keep the water from freezing. An overflow pipe should be carried down inside of the kitchen to the ground or sewer pipe. The pipe leading from the roof to collect the rain water should be packed closely at the point where it enters to keep out leaks and cold. A good carpenter will make a satisfactory job of such a plan, and insure the owner of a good, serviceable water supply at all seasons. In building such a rain water tank over the roof of a kitchen care must be taken to furnish extra posts and joists so their weight will not fall on the roof rafters. The weight of a water tank of large dimensions is very great and it must have firm supports. A roof tank of this nature will furnish water only for the first floor, but if a supply is needed for the second story the problem becomes more involved. The storage tank must be located in the garret, and unless the roof is quite high it is not so easy to collect all the rain water falling on it. Much depends upon the nature of the roof itself.

Thousands of country homes depend entirely upon rain water storage tanks for their water supply, and they answer the purpose satisfactorily. If the tank is made sufficiently large there is little or no danger of running short. Rain water is extremely soft to the hands and is preferred by most people for washing and toilet purposes. For drinking it is less satisfactory. It is well, therefore, to have a pump or well in addition to the rain water tank. A great many who have rain water tanks installed still depend upon their pump or well for the drinking water, and the plan is a good one.

A method of computing the amount of rain water that can be collected in a storage tank is to estimate the average rainfall in our Northern States at 36 to 48 inches, which is good for nearly the whole country. If the roof had a thousand square feet an average of 70 gallons of water would be collected per day. A gallon occupies 231 cubic inches of storage space. Thus one could figure out the amount of space needed for a family. But the 70 gallons are not collected each day, and a reserve for at least two weeks must be stored. This would permit from a storage tank, with a capacity of 980 gallons, a use of 70 gallons a day for two weeks without any rain storm to fill up the tank. A tank holding 1,000 gallons of water is, therefore, a good, safe size for a family of six or seven.

Artesian well water is one of the purest and safest that can be used, and plants for utilizing it are being installed in increasing numbers throughout the country. The cost of sinking artesian wells depends largely upon the distance that borings must be sunk. Sometimes they are essential to get a sufficient supply, for the shallower-dug wells do not tap the lower springs and thus dry out in hot weather. The cost of sinking artesian wells is usually estimated at six or seven dollars per foot for

depths under 300 feet, and slightly more for depths exceeding this. It may be seen that an artesian well that must go down four or five hundred feet to tap a good water supply is rather an expensive luxury. Even when the well is sunk the water must be forced up to a storage tank to furnish the house with a supply by gravity. This force may be in the form of a windmill or power engine.

A windmill has its picturesque and useful function, and many prefer it to-day to other forms of power. Their cost of construction has lessened in recent years, and their serviceableness increased. A good ten-foot galvanized steel windmill erected on a sixty-foot galvanized tower would cost to-day about $275, and a fourteen-foot windmill on a sixty-foot frame tower would cost about $100 more. With the windmill, storage tank and artesian well complete, the cost may easily run up to $1,500 to $2,000, with the depth of the well ranging from 200 to 300 feet. But such a plant is permanent, and will always give the house a complete supply of pure, uncontaminated water. There would be no possible danger from contamination through sewer seepage or drainage.

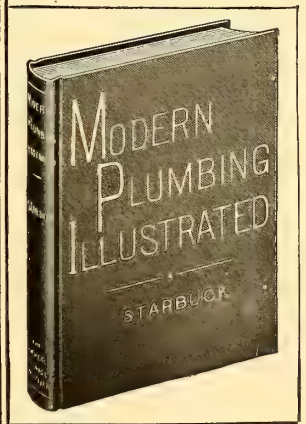
Small gasoline and hot-air pumps for forcing the water up are more common to-day than formerly, and they are being installed rapidly throughout the country. These little engines work automatically and stop of themselves when the tank is full. There is no danger of waste or an overflow and the engine is not eating up fuel except when working. A two-horse power engine will do the work satisfactorily, and such an engine can be purchased and installed for from $200 to $285. The engine can be located in the cellar of the house or an outside building built for its special accommodation.

There is another way of securing a proper water supply by means of a hydraulic ram. The ram has the advantage of being able to pump water from a distant pure-water supply at little expense. The ram may be located not far from the house where an impure water supply can drive it. None of this water gets into the drinking supply. It simply drives the ram and flows away into a drain pipe. A supply pipe may be laid from a distant spring or brook and the ram will force this up into the house. Under certain conditions the hydraulic ram will prove the cheapest and most satisfactory method of supplying the house with water. The cost of installing the ram, with the necessary piping, may be made no more than a few hundred dollars, but the final cost must depend upon the distance from the spring or brook that furnishes the water.

All of these systems are in use in different parts of the country, and it may be seen from the above remarks that the type selected depends upon topographical conditions. In parts of the country where an artesian well would have to be sunk hundreds of feet, the cost would be so great that many would hesitate to adopt this method. Possibly there is within half a mile some inexhaustible spring or river that could be tapped and water forced into the house by a hydraulic ram. Or if both of these conditions are lacking there is the rain water system at hand. If the rainfall is sufficient in that locality, and the roof space ample, it would be cheaper to build a large tank under the roof and pipe the water by gravity to the inside of the house. The old method of placing the rain water tank in the cellar or on the ground has the disadvantage of never being ready for use in pipes. It must either be hauled up by hand power or pumped up by an engine. In the end it will prove far less satisfactory.

Drinking water can not be stored satisfactorily for any length of time. This applies to

Modern Plumbing Illustrated



By R. M. STARBUCK

400 (10¼ x 7½) PAGES

55 FULL PAGES OF ENGRAVINGS

PRICE, $4.00

¶ A comprehensive and up-to-date work illustrating and describing the Drainage and Ventilation of Dwellings, Apartments and Public Buildings, etc. The very latest and most approved methods in all branches of Sanitary Installation are given.

¶ Many of the subjects treated in the text and illustrated follow in the next column.

MUNN & COMPANY, *Publishers*
SCIENTIFIC AMERICAN OFFICE, 363 BROADWAY, NEW YORK

SOME OF THE SUBJECTS TREATED

Connections, sizes and all working data for all Plumbing Fixtures and Groups of Fixtures
Traps — Venting
Connecting and Supporting of Soil Pipe
House Trap and Fresh-Air Inlet
Floor and Yard Drains, etc.
Rain Leaders
Sub-soil Drainage
Floor Connections
Roof Connections
Local Venting
Bath Room Connections [etc.
Automatic Flushing for Factories, School Houses,
Use of Flushing Valves
Modern Fixtures for Public Toilet Rooms
Durham System
Plumbing Construction without use of Lead
Automatic Sewage Lift — Sump Tank
Disposal of Sewage of Underground Floors of High Buildings
Country Plumbing
Cesspools
The Electrolysis of Underground Pipes
Septic Tanks and Sewage Siphons
Pneumatic Water Supply, Rams, etc.
Examples of Poor Practice
Roughing — Testing
Continuous Venting for all classes of Work
Circuit and Loop Venting
Use of Special Waste and Vent Fittings
Cellar Work
House Drain — House Sewer — Sewer Connections
Plumbing for Cottage House
Plumbing for Residence
Plumbing for Two-Flat House
Plumbing for Apartment Houses
Plumbing for Office Building
Plumbing for Public Toilet Rooms
Plumbing for Bath Establishment
Plumbing for Engine Houses
Plumbing for Stables
Plumbing for Factories
Plumbing for School Houses, etc. [by Electricity
Thawing of Underground Mains and Service Pipes

Cottage Designs

No. 1. Cottage Designs
Twenty-five designs, ranging in cost from $600 to $1,500

No. 2. Low Cost Houses
Upward of twenty-five designs, costing from $750 to $2,500

No. 3. Modern Dwellings
Twenty designs, at costs ranging from $2,000 to $5,000

No. 4. Suburban Homes
Twenty selected designs, costing from about $3,000 upward

By far the most complete collection of plans ever brought out ¶ Illustrated with full-page plates ¶ ¶

$1 each ¶ Sold separately

MUNN & COMPANY, PUBLISHERS
361 BROADWAY :: NEW YORK

Soda Cracker Logic

Any baker can make an ordinary soda cracker—but to produce Uneeda Biscuit requires the specially fitted bakeries of the

NATIONAL
BISCUIT
COMPANY

All soda crackers are food. But there is only *one* soda cracker highest in food value as well as best in freshness. Of course, ***that*** soda cracker is

Uneeda Biscuit **5¢**

CRYSTAL Domino SUGAR

5lb Sealed Boxes Only! · Best Sugar for Tea and Coffee! · By Grocers Everywhere!

BUILDING A BEAUTIFUL HOME IS EASY

If you get the right plans from the right architect. It is not a matter of money, but of knowing how to design properly and plan economically. **I do this.** Buy my books and prove it, or write me about your special plans.

Picturesque Suburban Houses. By mail, $2.00. Distinctive designs for cement, stone and frame houses from $3000 up. Complete descriptions and estimates.

Book of Bungalows. By mail, $2.00. All new and artistic designs for one and one-and-a-half story bungalows, from $1000 up.

Picturesque Summer Cottages. Vol. 3. By mail, $1.00. Beautiful designs for stone or shingle homes, rustic summer cottages and bungalows.

Camps, Cabins and Shacks. By mail, $2.00. Forty unusual and practical designs. Over half of buildings to cost between $350 and $1000.

E. E. HOLMAN, Room 14, 1020 Chestnut St., Philadelphia, Pa.

It Don't Pay to Feed Hens That Don't Lay

We have for sale 100 pure bred yearling White Leghorn hens—**all laying to-day**—$2.00 each. Also 5 cockerels $5.00 each, or we will divide the lot to suit—Settings of 15 eggs, $2.00.

BELLE HILL WHITE LEGHORN RANGE, Elkton, Md.

the rain water as well as to the water pumped into tanks from springs. In the latter case, however, the pumping may be done daily and the stored water will thus be kept fresh and clean. Stored drinking water becomes stale and obtains a bad taste from the storage tank.

We are thus forced back in many cases upon the old-fashioned hand pump or well for our drinking water. So much has been said about the contamination of well water that many are afraid to drink water from it. This fear is well founded, too, unless we know something about the well. In densely populated sections the old wells should invariably be closed, because few of them remain uncontaminated by the drainage from surrounding houses and leaky sewage pipes. In thinly populated places the well water may be as pure as any water obtainable. But the slope of the land, and the location of the barn, cesspools and house drainage must all be considered. Does this drainage run into the well? If so, there is danger lurking in every drop of water drawn from it.

In connection with the water supply system, therefore, the question of drainage is more or less involved. Not that the two must be worked out together in one comprehensive system, but if the drainage is going to interfere with the water it must be changed and improved. Sometimes it is easier to change the drainage than to close up an old well. Surface drainage can very easily be changed so as to flow in a different direction from the well. Small underdrains of porous, open pipes can be laid below the subsoil so that they will catch all the drainage and carry it from the house in any direction needed. These under drains will also make the house healthier by freely removing all moisture from around it, thus reducing any tendency to damp cellars. Hidden streams and pockets will be tapped and the surplus water carried off.

Sewage must also be removed scientifically. A modern cesspool or bacterial sewage closet, properly constructed, is far more sanitary than running the sewage into some shallow stream. The latter method will soon become penalized by State and county laws. It is the most common method of spreading disease. A sanitary cesspool of two compartments, so that bacterial action or decomposition can go on rapidly in one, is the safest system. The cesspool should be made of brick or stones tightly cemented so that water will not leak through the joints. Into the first compartment the sewage pours, and into the second it trickles slowly, so that little agitation is caused. In the latter place then the millions of bacteria will decompose the solids and permit the sewage to pass off as a liquid. If overflow pipes are connected with this compartment the liquid sewage can be carried to lower ground and finally disposed of in the soil. Before it reaches any spring or underground water supply, then, it will be purified of its offensiveness and dangerous poisons. One thus protects his own home and drinking water as well as eliminates the danger to neighbors.

PARQUETRY Plain or Ornamental
AND HARDWOOD FLOORS

Old Style Carpets do not meet the requirements of the modern house; Parquetry Flooring is now holding their place. This is everlasting, inexpensive and most pleasing in effect. Write for designs. Red Oak Flooring ⅜x1½ in. for room 10x12, $9.60. Mantels, Tile, Grilles, Fly Screens.

W. F. OSTENDORF, 2923 N. Broad St., Philadelphia

Art Stone Lawn Furniture

Will last for centuries, do not have to be taken in and stored during winter months. Do not have to be painted. Don't fail to write for photographs and prices of our Cast Stone and Cast Iron Lawn Furniture. The low prices will interest you.

SIDNEY CEMENT STONE CO., Sidney, O.

THE HEN HOUSE

By Ida D. Bennett

THE hen house for the accommodation of the small domestic flock will not differ materially from that of the more ambitious poultry raiser, as the rule in large plants is toward the use of small or colony houses rather than of large houses accommodating a large number of fowls. The same requirements which make for the comfort of the fowls are equally necessary in the home flock—a tight, warm house, well lighted and convenient in arrangement so that the care of the flock may be comfortably attended to and the time spent among them prove a pleasure.

To secure desirable results the house need be neither expensive nor ornamental, but it must be substantial and of sufficient size to accommodate the number of fowls kept with room for expansion. It must be absolutely draftproof, which means airtight on three sides at least, though the fourth, which should always front the south, may be wide open if necessary.

Personally I do not like the open-front house, but I think the muslin front, modified to the extent of covering a portion of the window space with thin muslin, an excellent idea, as it allows the admission of air to the house at night without the addition of moisture, and on stormy days when a south wind makes necessary the closing of windows the muslin opening admits a current of fresh air unattended with wind or moisture.

The location of the poultry house is of first importance, though I am aware that this is sometimes arbitrary owing to the restricted limits of a city or suburban lot. It is usually possible, however, to control the exposure or location of the windows, which should always front the south and the building should, if possible, be protected on the north and on the side of the prevailing winds by other buildings or anything which will break the force of the wind. Evergreens form one of the most successful means of protection. A tall growth of evergreens on the windward side of the hen house and parks makes the situation pleasant both summer and winter.

It is not really necessary that one should go to the expense of an entirely new building for the housing of poultry; frequently one has an outbuilding which, with a little planning and labor, may be converted into a comfortable house, or a portion of the barn may be partitioned off for the purpose, but the isolated building is to be preferred as insuring freedom from rats which are always attracted about a barn by the grain.

In adapting an idle structure into a poultry house, my own experience may be helpful.

This little building, originally used as a shelter for a horse running in pasture, was so open as to give one a fair view of the surrounding landscape from every side, so plentiful were the cracks between the boards. Sufficient old lumber was found about the place to close up the inside of the studding, leaving a four-inch space between the boards which was packed full of dry leaves to the eaves, except on the south side where an opening large enough for two sash was cut, the remainder of the space being lined and packed like the rest. The outside boards were then battened with lath and the inside lined with tarred paper, lath being used to hold it in place. The east end was fitted with a platform and narrow perches, and a small door under the windows gave the fowls egress to the barnyard, while a door in the west end admitted to the scratching shed which protected the building from the west winds. The building has no floor, but a gravel one that is higher than the surrounding land and is fairly dry and comfort-

The bride's wise choice

"From our new cottage home
"I shall omit the useless in-
"ner doors, mantels, extra
"chimneys, fancy lamps that
"are never lighted, books
"which are never read, vases
"which contain no flowers, etc. Let us
"first purchase an outfit of

AMERICAN RADIATORS & IDEAL BOILERS

"because they save much coal, need no repairs, keep all ashes, smoke, "and soot out of the living-rooms, are safe, and will last as long as "the cottage shall stand. These savings and economies will help in "time to pay for the finer furnishings."

"The cottage will be kept cozily warm all over, and the family health thus "protected. If we prosper and move to a larger house, we will get our full "money back, or 10% to 15% higher rental to cover cost, as IDEAL Boilers "and AMERICAN Radiators do not rust out or wear out."

Those who know that happiness depends so much upon the comfort and healthfulness of the home, whether newly-weds or longweds, are urged to write us at once.

A No. 3-22 IDEAL Boiler and 600 ft. of 38-in. AMERICAN Radiators, costing the owner **$245**, were used to Hot-Water heat this cottage.

A No. 22 IDEAL Boiler and 240 ft. of 38-in. AMERICAN Radiators, costing the owner **$110**, were used to Hot-Water heat this cottage.

At these prices the goods can be bought of any reputable, competent Fitter. This did not include cost of labor, pipe, valves, freight, etc., which installation is extra and varies according to climatic and other conditions.

Our outfits are as quickly put into OLD buildings as in new—farm or city—and this is just the season to get the services of the most skillful Fitters. *Prices are now most favorable.*

IDEAL Water Boiler

Showrooms in all large cities

AMERICAN RADIATOR COMPANY

Write Dept. 6 CHICAGO

IDEAL IDEAL IDEAL

200 BUNGALOWS

RADFORD'S ARTISTIC BUNGALOWS is a new book just off the press and illustrates 208 designs of Bungalows.

It is the result of a year's work of our California representative and contains designs suitable for any climate and for every material. The designs show the Bungalows as they will appear when built, and the floor plans show the arrangement and the size of the rooms. Estimated cost of construction given, ranging from $900 to $5000.

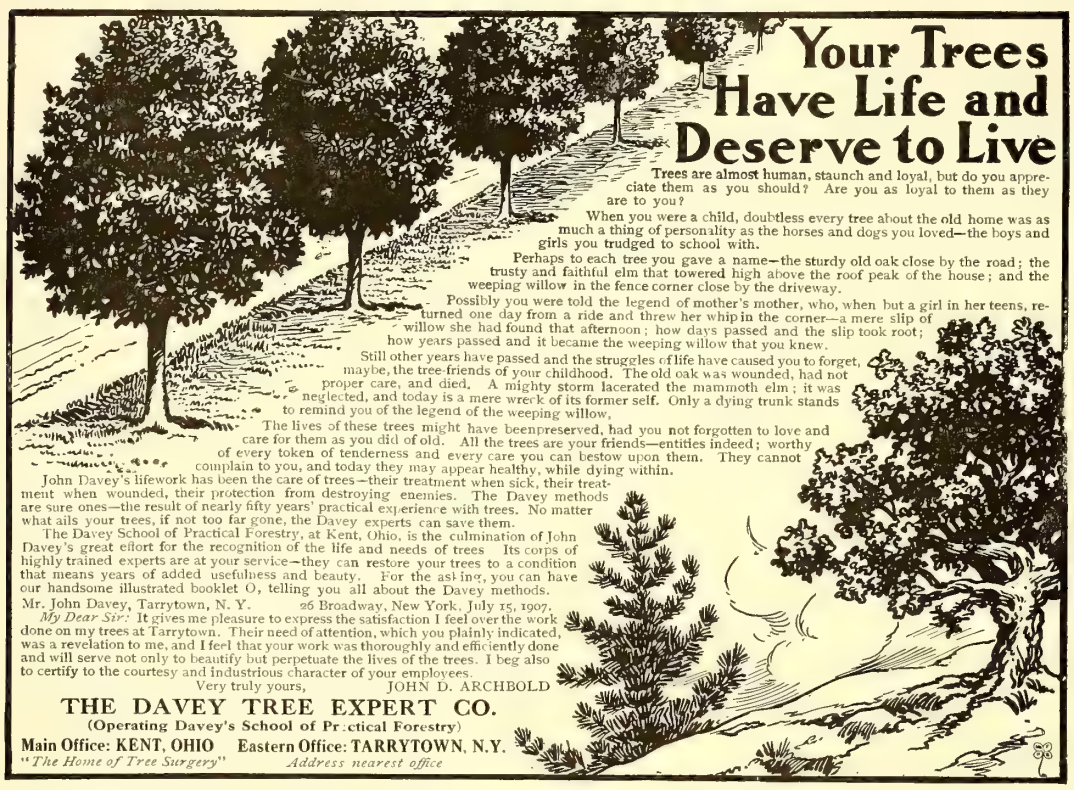
The book is printed from the finest half-tones, on the best enameled paper, and is handsomely bound. Price $1.00, postpaid.

CEMENT HOUSES AND HOW TO BUILD THEM

This book contains illustrated details of cement construction, standard specifications for cement blocks, general information concerning waterproofing, coloring, cement plaster work, etc., together with perspective views, and floor plans of 87 cement, plaster and concrete block houses. Cloth bound, price $1.00, postpaid.

THE RADFORD ARCHITECTURAL CO.,

261 Broadway, New York Dept. A.H. 185 Jackson Boulevard, Chicago



Your Trees Have Life and Deserve to Live

Trees are almost human, staunch and loyal, but do you appreciate them as you should? Are you as loyal to them as they are to you?

When you were a child, doubtless every tree about the old home was as much a thing of personality as the horses and dogs you loved—the boys and girls you trudged to school with.

Perhaps to each tree you gave a name—the sturdy old oak close by the road; the trusty and faithful elm that towered high above the roof peak of the house; and the weeping willow in the fence corner close by the driveway.

Possibly you were told the legend of mother's mother, who, when but a girl in her teens, returned one day from a ride and threw her whip in the corner—a mere slip of willow she had found that afternoon; how days passed and the slip took root; how years passed and it became the weeping willow that you knew.

Still other years have passed and the struggles of life have caused you to forget, maybe, the tree-friends of your childhood. The old oak was wounded, had not proper care, and died. A mighty storm lacerated the mammoth elm; it was neglected, and today is a mere wreck of its former self. Only a dying trunk stands to remind you of the legend of the weeping willow.

The lives of these trees might have been preserved, had you not forgotten to love and care for them as you did of old. All the trees are your friends—entitles indeed; worthy of every token of tenderness and every care you can bestow upon them. They cannot complain to you, and today they may appear healthy, while dying within.

John Davey's lifework has been the care of trees—their treatment when sick, their treatment when wounded, their protection from destroying enemies. The Davey methods are sure ones—the result of nearly fifty years' practical experience with trees. No matter what ails your trees, if not too far gone, the Davey experts can save them.

The Davey School of Practical Forestry, at Kent, Ohio, is the culmination of John Davey's great effort for the recognition of the life and needs of trees. Its corps of highly trained experts are at your service—they can restore your trees to a condition that means years of added usefulness and beauty. For the asking, you can have our handsome illustrated booklet O, telling you all about the Davey methods.

Mr. John Davey, Tarrytown, N. Y. 26 Broadway, New York, July 15, 1907.

My Dear Sir: It gives me pleasure to express the satisfaction I feel over the work done on my trees at Tarrytown. Their need of attention, which you plainly indicated, was a revelation to me, and I feel that your work was thoroughly and efficiently done and will serve not only to beautify but perpetuate the lives of the trees. I beg also to certify to the courtesy and industrious character of your employees.

Very truly yours, JOHN D. ARCHBOLD

THE DAVEY TREE EXPERT CO.

(Operating Davey's School of Practical Forestry)

Main Office: KENT, OHIO Eastern Office: TARRYTOWN, N.Y.

"The Home of Tree Surgery" *Address nearest office*

FOR SALE — STAMFORD, CONN. —

Gentleman's Country Estate; 245 acres; improved property; fine stone residence with three bathrooms; steam heat; 25 other buildings, including magnificent cow stable accommodating 100 head; splendid horse stable; carriage house and garage; city water; electric light; modern plumbing; Rippowam river flows through property.

SEND FOR 26-PAGE ILLUSTRATED BOOKLET

HOPKINS & BOYD

312 Madison Avenue, NEW YORK

Elkhart Buggies

are the best made, best grade and easiest riding buggies on earth for the money.

FOR THIRTY-SIX YEARS

we have been selling direct and are

The Largest Manufacturers in the World

selling to the consumer exclusively.

We ship for examination and approval, guaranteeing safe delivery, and also to save you money. If you are not satisfied as to style, quality and price you are nothing out.

May We Send You Our Large Catalogue?

Elkhart Carriage & Harness Mfg. Co.

Elkhart, - - - - - Indiana

Our well-equipped Book Department is prepared to recommend & supply

MUNN & CO.

BOOKS

Relating to Architecture, Ceramics, Decoration, Rugs, Furniture, etc. :: ::

NEW YORK

able, but an earth floor can never be kept as dry as a board one, and the chickens tear it to pieces so thoroughly that it is apt to be unsatisfactory. The best floor for the poultry house is one of boards or of cement elevated at least a foot above the ground so as to be entirely free from dampness. The cement floor has the advantage of being easily cleansed and disinfected and having no cracks (if properly made) to harbor vermin and disease germs, but it is far colder in winter than a board floor, and, unless kept well covered with straw or other litter, is hard for the fowls to alight on when flying down from perches or nests.

The walls of the house should be double, and where one is building, and need not consider expense too closely, a liberal use of tar paper or roofing will prove a wise precaution. This should be nailed directly to each side of the studding before the siding and lining is placed, and the paper should extend up on to the rafters and over on to the floor joists, thus shutting out any drafts of air at these important points. It will be money well expended if the floor studding is covered with the paper before the floor is laid, as this insures not only a warm, but also a dry floor. Smooth, matched boards take whitewash better and look far better than the paper when whitewashed. Care should be used in applying the paper to lap it sufficiently, and if it is stuck together with tar or cement it will be still better, especially in lining the floor.

And lastly the boarding on the outside should be carefully battened and all door and window frames carefully fitted, and the whole made sanitary by the installation of a practical ventilator, or the use of a movable sash of muslin which may be used when the weather prevents the opening of windows or doors for fresh air, for fresh air is one of the indispensable conditions of a successful poultry house.

The perches should occupy the warmest part of the house, but should be at one side or end, and as far from the windows as possible. Not much room is required for perches, one square foot of space being ample for each fowl. A platform of matched boards, not over eighteen inches high and three feet wide, should be erected to hold the perches, which should be made of light stuff, so that they can be easily taken down to clean and to examine for the presence of lice. Never erect stationary perches, or those that are hinged or in any way attached to the wall. If the perching place is long, make the perches in sections which can be easily handled. Eight inch fence boards will answer for the frame, and narrow strips of wood, two inches wide and slightly rounded on the edges, do for the perches; these should be placed a foot apart. The platform should be a few inches wider than the perches, to afford room to alight. The space under the perches may be utilized for nests, and a swinging platform, which will hold a number of nests and may be swung out to clean and inspect, will be found very convenient.

Do not cumber up the floor space with useless contrivances for holding all sorts of truck; loose, movable troughs to hold mash, which may be stood up against the wall out of the way, are necessary, and these should be ample enough to allow of the fowls feeding without crowding; a very good trough is made of two eight inch fence boards nailed together in "V" shape, the end board extending several inches above the top of the trough and having a strong wire drawn through the upper ends across the top of the trough; this prevents the hens getting into the trough; a piece of wood in the center of the trough will serve to brace it and afford a convenient handle to lift it with.

At a convenient height for the hens to reach a rack may be placed along one wall to hold the oyster shells, grit, charcoal, and the like.

Six square feet of floor space, exclusive of

SECTIONAL
"COME-PACKT"
TRADE FURNITURE MARK

"Seeing is Believing"

$10.50

"Cheap" Mission Furniture is an abomination, but it is no reflection on honest, high-grade furniture that it can be bought for less than half the retail store price—especially when you *know* what you are getting. Our plan of selling "Come-Packt" Sectional Furniture direct from our factory to the user cuts out suchuseless and heavy selling expenses that our low prices are logical. What is better still, there can be no doubt as to that most important consideration—the *quality*.

You see just what you get—and you get *Quarter* Sawed *White* Oak—rich in beautiful flake and grain. Selected stock of this kind costs twice as much as the plain sawed red or white oak used in most furniture. No stain disguises cheaper substitutes in our furniture; no defects can be concealed. It comes "in the white"—a solid satisfaction to the most critical, and a big saving in the *cost* to you.

$13.25

$6.75

The assembling of the finished sections and the application of the stain we send (you can choose from seven kinds) is simple, easy, and a matter of an hour or two at most, depending on the size of the piece. All the hard work is done at our factory—even the holes bored for screws—and you thus have the joy of creation, shorn of all the arduous detail and all the difficulties.

$17.75 With 3 Leaves

$12.75

To illustrate, the Morris Chair at the head of this article comes in four completed sections. The two sides are each entirely assembled, the front rail fitted to slip into the mortised joints, as is also the back rail with hinged back attached. The cushions are all made, ready to drop into place. The Settle is equally simple, and even the massive Dining Table is one of the simplest pieces to put together; there are but five sections.

A Tempting Assortment

Over 100 other correctly designed and beautifully proportioned pieces are shown in our new 48-page catalog, just off the press. It will prove fascinating to the lover of artistic Arts and Crafts furniture—it will delight the housewife—and it will please the man who pays the bills. Write us to-day and we will mail a copy free, and tell you of our liberal guarantee that enables us to say "Your money back if you say so." Address

$22.50

$14.50

The International Manufacturing Co.
539 Edwin Street, Ann Arbor, Mich.

SECTIONAL
"COME-PACKT"
TRADE FURNITURE MARK

the roosting quarters, should be allowed for each fowl, and accommodation should be afforded for at least twice the number of fowls it is intended to keep, as there will always be extra fowls, cockerels and pullets, which one will wish to cull out in the fall, which must be provided for. The house should be divided through the center by a lath or wire partition, to enable one to separate the cockerels from the rest of the flock, so as to feed them more heavily than it is desired to do the hens which are to be kept in laying order. Make all doors wide enough for free entrance and egress.

Garden Work About the Home

(*Continued from page xiv*)

Young trees often hold many of their dead leaves until spring, by which time they have faded to a pale, silvery yellow, which is almost white compared to the dark russet color of the dead leaves on the English beech. Both are delightful in winter, whether seen in broad sunlight or in the intense, though diffused, light of a snowy day.

The sound of snow or rain falling on the dry leaves is most soothing on a winter's night, if the tree is near one's bedroom window. Every gust of wind is noised by their fluttering.

The tree has no serious diseases or insect pests, and should be planted more frequently. It is a little hard to grow, because it is dependent upon a bacteria in the soil, and if that is not present the tree, though alive, may not increase in size for years. Inoculating the new site with soil from an established beech grove is said to work well.

Beech nuts are pleasantly sweet, but too small to bother to eat except out of doors.

NEW BOOKS

BUNGALOWCRAFT. Edited by Henry Menken. Los Angeles: H. A. Eymann. Pp. 120. Price, postpaid, $1.00.

A useful book abundantly illustrated with plans, elevations, interiors, and details of many kinds. Some of the exteriors are from photographs; others from drawings. It is a book designed to really help in the building of bungalows, and it accomplishes its purpose in a very successful way. All the bungalows are priced approximately, and while this is a guide to California only, it is not without value to those who may use this book as a guide to the building of bungalows in the East.

ALPINES AND BOG-PLANTS. By Reginald Farrer. London: Edward Arnold. Pp. 12+288.

Mr. Farrer is an enthusiast on his subject, and writes with enthusiasm. This means an interesting volume, a book crammed with useful, helpful suggestive knowledge, and a model handbook of a specialistic topic. It is a book intended for a special class of plant lovers, but both rock and marshy gardens are coming more and more into popularity, and it is well to have so useful a book as this at the very threshold of a new movement. Mr. Farrer writes at length of his favorite flowers, but nowhere does he tell us too much of them. His practical experience has been of the widest, and he makes his extended studies and experiments the basis of his present handbook.

Study
Architecture

EASY LESSONS
OR, STEPPING STONE TO
ARCHITECTURE

By THOMAS MITCHELL

A SIMPLE TEXT-BOOK telling in a series of plain and simple answers to questions all about the various orders as well as the general principles of construction. The book contains 92 pages, printed on heavy cream plate paper and illustrated by 150 engravings, amongst which are illustrations of various historic buildings. The book is 12mo in size, and is attractively bound in cloth.

PRICE FIFTY CENTS, POSTPAID

Munn & Co., 361 Broadway, New York

JUST PUBLISHED
Bungalows, Camps & Mountain Houses

Consisting of a large variety of designs by a number of architects, showing buildings that have been erected in all parts of the country.

Many of these are intended for summer use, while other examples are of structures erected in California and the Southern States for permanent residences. Also Camps, Hunters' Lodges, Log Cabins, etc. The book contains

Seventy Separate Designs
of which several are Log Cabins and Camps
78 Exterior Views, 12 Interior Views and 69 Floor Plans

In the text is given an article on "The Bungalow," with hints on selection of site, sanitation, layout and construction, together with a very complete description of each design, with cost where it could be obtained. The work is intended to meet the needs of a large class of people who are planning summer homes at low and moderate cost, for erection in the Woods, Mountains, and on Lake and Seashore. Size 8x9½ inches, bound in illustrated boards. Price, $2.00 postpaid.

MUNN & COMPANY, Publishers
361 Broadway, New York

Details of Building Construction

A collection of 33 plates of scale drawings with introductory text

By CLARENCE A. MARTIN
Assistant Professor, College of Architecture, Cornell University

This book is 10x12½ inches in size, and substantially bound in cloth. **Price $2**

MUNN & CO., 361 Broadway, NEW YORK

Bound Volumes of American Homes and Gardens
Volume for 1905 $2.50
Volume for 1906 $5.00
Volume for 1907 $5.00
MUNN & CO., Publishers 361 Broadway, New York

The book concludes with a helpful chapter on the water garden, and is handsomely illustrated with really beautiful photographs. There is a detailed index.

A Guide to Tapestry Painting and Stenciling. Philadelphia: F. Weber & Co. Pp. 64. Price, 50 cents.

This is a useful little handbook, intended to promote the agreeable art of tapestry painting and stenciling in liquid tapestry dyes and tapestry oil colors. The directions are very precise and definite, and will be found of practical value to those undertaking work of this kind. It is illustrated with numerous patterns of stencils, and contains full lists of the materials and implements needed.

The Plate Collector's Guide. By Percy Macquoid. New York: Imported by Charles Scribner's Sons. Pp. 12+200.

This handbook will be eagerly welcomed by the collectors of old plate. It is avowedly an abbreviation of the more exhaustive work on "Old English Plate," by the late W. J. Cripps. The present handbook contains, in a condensed form, those portions of Old English Plate necessary to a reader wishing to acquire a general knowledge on the subject, additions being made in certain sections that are assumed to be of interest to the collector.

The abbreviations and omissions, that give individual character to the present work, are principally confined to historical and technical details that are impossible to compress into a volume of this size. The chapter in the larger work on ecclesiastical plate has been excluded, but substantial additions have been made to the discussion of tankards, porringers, salts, smaller cups, spoons and forks.

The book is illustrated in handsome form, and is embellished with numerous photograph plates. The illustrations of marks and date letters is very full.

Nature Study. A Manual for Teachers and Students. By Frederick L. Holtz. New York: Charles Scribner's Sons. Pp. 14+546.

It has been no slight task to prepare an adequate text book for the guidance of nature teachers, as that immensely varied topic is now interpreted in American schools. The specialist may differ with Mr. Holtz in some minor matters, but as to the general excellence of his book there can be no doubt. It is divided into three parts. The first is devoted to a discussion of underlying principles and methods. The second contains appropriate subject matter of a biological nature, with practical hints and suggestions on the collection and care of material, and the presentation of lessons. The third consist of a course of nature study for the eight school grades. The book is, of course, intended as an aid and guide to the practical teacher, and hence is written from the teaching and school point of view. But the nature lover who has long since passed school age may here recall some of the rural pleasures of his youth, and, if not for himself, at least for the younger members of his household, gain many an agreeable and useful fact that cannot but add to the interest of his country home.

The Book of Fish and Fishing. By Louis Rhead. New York: Charles Scribner's Sons. Pp. 14+306. Price, $1.50 net.

Although presented in a small sized page, convenient for the pocket, this book is a complete compendium of practical advice to guide those who angle for all fishes in fresh and salt water. This seems a large subject for a small book, but Mr. Rhead brings an admirable art of condensation and compression to his book and has condensed a multitude of facts within its covers that must be both helpful and informing to every lover of the sportsman's art of fishing. But it is angling only that he is concerned with. It is not Mr. Rhead's purpose to tell his readers how to get every sort of fish out of the water, but those best known for gameness and economic value, and he offers suggestive helps both to the untried fisherman and to those who may have acquired some familiarity with this art. The book is, in short, a miniature encyclopedia of angling knowledge and may be sure of a hearty welcome.

Home Life in Germany. By Mrs Alfred Sidgwick. New York: The Macmillan Co. Pp. 6+327.

This charming and delightful book is from the pen of an author of German parentage, but born and bred in England. Writing for English readers she is perfectly at home in Germany, and attacks her subject from the home side with unusual penetration. Writing from the inside, as it were, of her subject, she is entirely alive to the audience to whom she is appealing. Her book is, in fact, a true picture of home life as interpreted by the Germans. It is, of course, no guide to living. It makes no pretense to tell how to do things; it offers no suggestions on the conduct of the home or of making a living from the soil. Even structures and decoration are omitted in their constructive aspects. But the author has looked into many German homes many, many times; she has lived in them as a German, and she knows whereof she writes. Her chapters are real pencil sketches, presented with an abundance of keen insight and much familiarity. Here, at last, we know the German home life as it really is. It is a book of great charm, delightfully written, and illustrated in a handsome manner.

MAKING A COUNTRY HOME

(*Continued from page ix*)

aid you in feeding the birds. These allies are of so much importance to us that we must count them into the family, and include them in our general garden arrangement. A few mountain ash trees will give the largest amount of dinners for robins and some other birds of any tree that I know. Next in value I should place the wild cherries. In this case you have very handsome shade trees and good timber wood. The wood of the mountain ash is of no value, but the tree is one of the prettiest for the lawn. When loaded with its fruit in autumn it is the handsomest thing in all our flora. A hedge of tartarian honeysuckle furnishes an excellent amount of bird feed during July and August. Robins and catbirds are very fond of these berries, leaving the berry field to devour them. To these add in your shrubbery lawn a few bushes of Viburnum opulus, and you will have not only a splendid shrub, but food prepared for winter birds—drawing the cedar birds and pine grosbeaks. I consider this a very essential part of my small fruit growing and orchard growing.

Where A Broom Can't Go

The Bissell Sweeper is the every-day necessity and convenience of the home. It reaches the dust under couches, beds and other places where it is awkward and distressing to use a corn broom, making an easy task of what is ordinarily a hardship. The superiority of the

Bissell

Sweeper is recognized throughout the world, and over nine million homes can testify to its efficiency and labor-saving qualities. It performs its work so easily, quietly and thoroughly as to win the everlasting approval of the user. It has robbed sweeping day of its terror, making the work a pleasant pastime instead of a disagreeable drudgery.

Bear in mind its great economy in dollars and cents, as it will last longer than fifty corn brooms.

Buy of your dealer now, send us the purchase slip *within one week*, and we will send you FREE a good quality Morocco leather card case with no printing on it. Prices $2.50 to $6.50. Free booklet upon request.

Address Dept. 125

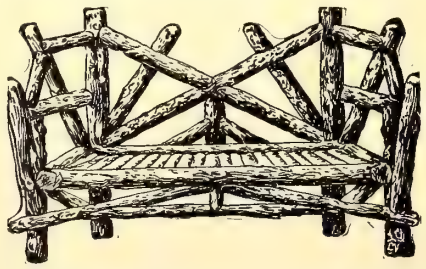
Bissell Carpet Sweeper Co.
Grand Rapids, Mich.

(Largest and only exclusive carpet sweeper makers in the world.)

Established 1875

"Rustic Work" WHICH GIVES THAT ARTISTIC FINISH TO COUNTRY ESTATES

This beautiful Rustic Settee, delivered to your station **$10,** will last a lifetime.



Rustic Tea Houses, Boat and Bath Houses, Arbors, Pergolas, Back Stops for Tennis Courts, Rustic Bridges for Ravines, Entrance Gates, in fact Rustic Work of every description.

Give the Birds A Home

Rustic Bird Houses

One Room, $2.00
Two Rooms, $3.00

Send for catalogue and sketches or have our representative call upon you.

RUSTIC CONSTRUCTION WORKS, 33 Fulton St., New York
H. I. PINCKNEY, Manager

Don't be knocked over by stenches from backyard debris

Are conditions at the back of *your* house as attractive *as in this picture?* Why not look up *The Stephenson Method,* seven years on the market, and if satisfied protect the health of your family by installing *The Stephenson Underground Garbage Receiver,* which removes all objections of the old swill tub.

The Stephenson Underground Refuse Receiver for ashes, etc. *The Stephenson Underground Earth Closets* for camps. *The Stephenson Portable Metal House* for camps. *The Stephenson Spiral Ribbed Ash Barrel* outwears two.

SOLD DIRECT. Send for circulars on each.

C. H. Stephenson, Mfr., 21 Farrar Street, Lynn, Mass.

PAINT-MAKING EXPERIENCE *vs.* **PAINT MIXING EXPERIMENT**

It doesn't pay to *experiment* with paint—
Because it's always at *your* expense.

Now, every batch of hand-mixed Lead and Oil paint is more-or-less an *experiment*—

You can't be sure of the grade of your ingredients—the raw materials—

And you can't be at all sure of proper *mixing*—It's all guess-work—you can't know whether you've got a good paint until you put it to actual wear and weather test—

Maybe it'll wear—*maybe* it won't—

You simply *take chances*.

But, you don't *need* to experiment—

There's *one* paint that's the result of tried-out *experience*—That's

Lowe Brothers High Standard Liquid Paint

The culmination of thirty-five years of progressive paint-making experience.

It's a paint made by *exact* formulas—

And these ingredients are thoroughly ground together by the best possible paint-grinding machinery—Thus the oil and the pigments are combined into the best paint-liquid—

That's why "High Standard" Paint *spreads* easier—hides better—wears longer, and leaves a better surface for repainting. There's a "High Standard" Paint and Varnish for every purpose—Linduro, Vernicol Enamel White and Interior Enamel are among them, and are just what you need for beautiful rooms.

Write for Booklet, "The Owner's Responsibility."

THE LOWE BROTHERS COMPANY
450-456 E. Third St., Dayton, Ohio.
Boston New York Chicago Kansas City

WRITE FOR CATALOGUE

Shows many of small cost and elaborate ones too. State work desired, how much fence you want, number of gates, style of building, etc We will submit designs or photographs and estimates, take measurements and erect if necessary. Satisfaction guaranteed. Also fountains, vases, settees, stable fittings, tree boxes, lanterns and ornamental iron. *Agents wanted.*

STEWART Iron Fence

THE STEWART IRON WORKS CO.
1726 Covington St., CINCINNATI, O.

The LARGEST MAKERS of IRON FENCE in the WORLD

FLOORS — NOTE CONTINUOUS BOND — ROOFS

A concrete tank erected on estate of Edmund Tatham, Katonah, New York

Frederick J. Sterner, Architect - - New York
De Lancey A. Cameron, Builder - - New York

Tank designed for storage supply of 15,000 gallons, built entirely of concrete reinforced with Clinton welded wire. Before roof was placed over tank, and during winter months, ice 10 inches thick formed on water stored therein. No cracks or leakage have developed.

Clinton Wire Cloth Company
CLINTON, MASS.

Ceilings — Partitions

Fireproofing Departments:
ALBERT OLIVER, 1 MADISON AVE., NEW YORK
WASHINGTON: Rosslyn Supply Co., Colorado Building
CHICAGO: Clinton Wire Cloth Co., 30-32 River Street
BUFFALO, N. Y.: Buffalo Wire Works Co., Inc.
ST. LOUIS: Hunkins-Willis Lime & Cement Co.
SAN FRANCISCO: L. A. Norris, 835 Monadnock Bldg
SEATTLE: L. A. Norris, 909 Alaska Building
CLEVELAND, OHIO: Carl Horix, 428 Garfield Building

KOLL'S PATENT LOCK-JOINT COLUMNS

The Best for Pergolas, Porches or Interior Use are made exclusively by

THEY CAN NOT COME APART — KOLL'S PATENT

HARTMANN-SANDERS COMPANY

Elston and Webster Avenues
CHICAGO, ILL.
Eastern Office, 1123 Broadway
NEW YORK

Send for Catalogue A-19 of Columns, or A-29 of Sun-dials, Pedestals, etc. (See also "Sweet's Index.")

HARTFORD

EVERY tire, no matter how poor has its patrons and its partisans; but the one true tire test is—time and travel.

Find, among your friends, the old and experienced motorists—men who have driven cars for four, five or six years; and tried, perhaps, every prominent tire produced.

In the majority of cases you'll find them committed beyond the possibility of change to

Hartford Tires

"The Tire That Lasts"

There's a definite, concrete reason for this—partially expressed in the phrase "The tire that lasts."

Hartford tires *do* last—because they are designed right to begin with; because the heavy tread is compounded exactly right; because the fabric is specially woven Sea Island Cotton; because the cushion is absolutely pure Para; because Hartford Inner Tubes are made to fit without folding, straining, or wrinkling, which means durability impossible in a tube vulcanized on a straight mandrel.

If you are inexperienced in buying tires or dissatisfied with your experience, consult those who have driven long and hard—almost inevitably they will direct you to the Hartford Tire—"The Tire That Lasts." Ask for Hartford Clincher Tires and Tubes on your new car or try a set the next time you renew.

The Hartford Rubber Works Co., Hartford, Conn.

BRANCHES:

NEW YORK, 57th St. and Broadway
CHICAGO, 12th St. and Michigan Ave.
PHILADELPHIA, 1425 Vine Street
BOSTON, 817 Boylston St.
DETROIT, 256 Jefferson Ave.
DENVER, 1564 Broadway
ATLANTA, GA., 94 North Pryor St.
BUFFALO, 725 Main St.
CLEVELAND, 1831 Euclid Ave.

TRADE MARK

NA
100
.S72
Cork.

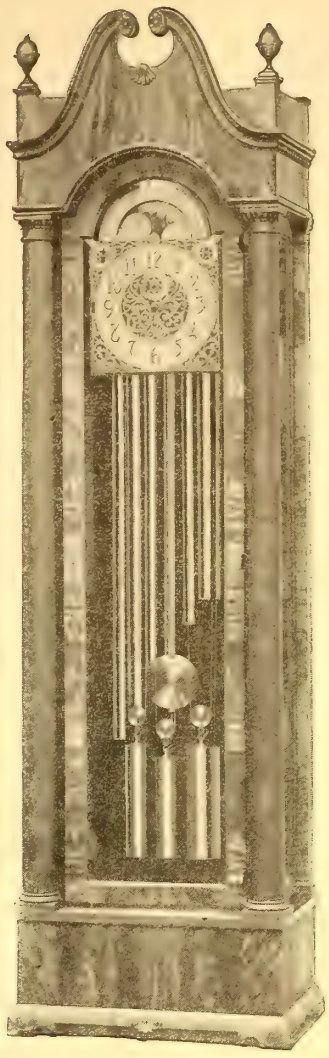
AMERICAN HOMES AND GARDENS

Vol. VI JUNE 1909 No. 6

$3.00 A YEAR

MUNN & COMPANY, Publishers

PRICE, 25 CENTS



HALL CLOCKS

Our line comprises the finest and most complete designs of high-class clocks on the market. Our movements are superior in nearly every detail and the purchaser is assured that he can buy the best by ordering a "Waltham."

We will soon have ready for delivery, our new Chiming Movement which chimes either Westminster, Whittington or St. Michaels.

Our "Willard" or Banjo Clock is a model of perfection and appeals to those who desire a first-class article in every respect.

If your local dealer does not sell our line, send direct for illustrated catalogue.

Waltham Clock Company
Waltham, Mass.

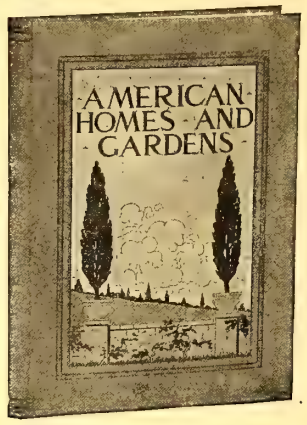
BOUND VOLUMES OF

American Homes and Gardens

1,100 ILLUSTRATIONS **1908** **494 PAGES PRICE, $5.00**

American Homes and Gardens covers a wide scope; it deals with house building from the design and construction of modest cottages on tiny lots to the building of mansions on large estates. All degrees of gardening, from laying out a landscape to the planting of a window-box, are dealt with. Practical questions of water supply, of sanitation, or of the arrangement of the kitchen receive equal treatment with draping of windows or the arrangement of old china.

American Homes and Gardens is beautifully printed. The year's volume contains more than a thousand engravings, as full of detail and finish as actual photographs. They depict some of the old and historic mansions of America, and the most beautiful of gardens or of natural scenery. The following list of a few of the principal practical articles which appear in *American Homes and Gardens* during 1908, will show the wide choice of subject:



Notable American Homes (12 descriptive articles)—**The Rose as a Summer Bedder**—**Private Automobile Garages**—**Leaded Glass Windows**—**Etching on Copper and Brass**—**Problems in House Furnishing** (12 papers)—**Garden Work About the Home** (12 papers)—**Indoor Bulb Culture**—**Farming Experiment of a Woman**—**Rugs from the Scrap Bag**—**Water Parks**—**Old-Time Lights**—**Latches and Knockers**—**The Sun Room**—**Japanese Gardens in America**—**Sun-Dials**—**Heating and Lighting with Alcohol**—**Spring Houses Old and New**—**Planning a Country Home**—**The House Roof and Its Garden**—**The Plant and the Season**—**Garden Streams and Bridges**—**Stencil Work in Home Decoration**—**Bungalows** (12 articles)—**Scientific Poultry Breeding.**

¶ A limited number of volumes for 1907 are available. 480 pages. 1,050 illustrations. Price, $5.00. Volume for 1906, $5.00. Volume for 1905, $3.50.

MUNN & CO., Publishers, 361 Broadway, N.Y.

What Collier's Controls and What Collier's Offers Advertisers

IN *no other magazine* during 1909 will be found the Drawings of Charles Dana Gibson, Maxfield Parrish, and Frederic Remington, the Sherlock Holmes Stories of Conan Doyle, the Poems of Rudyard Kipling, the Commentary on Outdoor Life of Caspar Whitney. The work of these masters in widely separated fields will be read and enjoyed exclusively in the half-million families to which Collier's goes every week.

The story told in your advertisement goes to this same half-million families—families where good things in literature, art, and MERCHANDISE are appreciated to the point of possessing.

E. C. PATTERSON
Manager Advertising Department

NEW YORK CHICAGO BOSTON TORONTO

PATENTS

THE WEALTH OF NATIONS

A PATENT gives you an exclusive right to your invention for a term of seventeen years. You can sell, lease, mortgage it, assign portions of it, and grant licenses to manufacture under it. Our Patent system is responsible for much of our industrial progress and our success in competing in the markets of the world. The value of a successful Patent is in no degree commensurate with the almost nominal cost of obtaining it. In order to obtain a Patent it is necessary to employ a Patent Attorney to prepare the specifications and draw the claims. This is a special branch of the legal profession which can only be conducted successfully by experts. For nearly sixty years we have acted as solicitors for thousands of clients in all parts of the world. Our vast experience enables us to prepare and prosecute Patent cases and Trade Marks at a minimum of expense. Our work is of one quality and the rates are the same to rich and poor. Our unbiased opinion freely given. We are happy to consult with you in person or by letter as to the probable patentability of your invention.

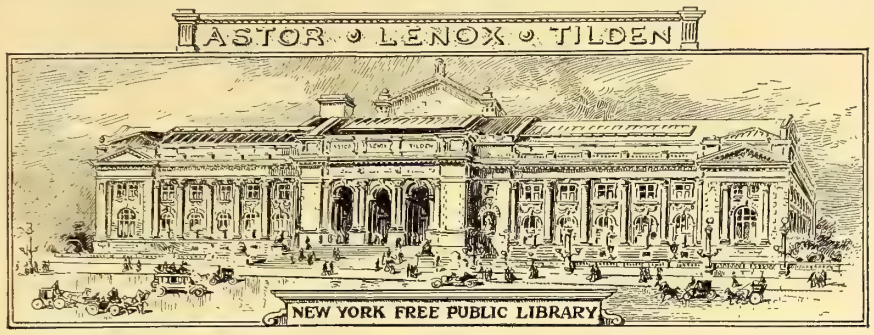
Hand Book on Patents, Trade Marks, etc., Sent Free on Application.

Branch Office:
625 F Street
Washington, D. C.

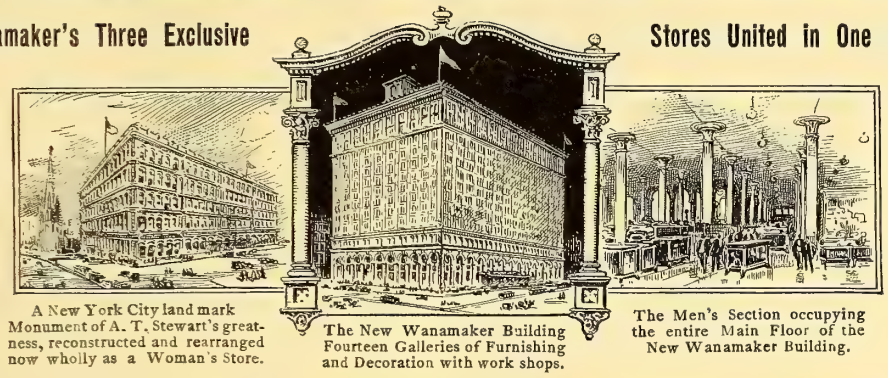
MUNN & COMPANY
Solicitors of Patents
Main Office: 361 BROADWAY, NEW YORK

SMITHSONIAN
AUG 12 1985
LIBRARIES

New York's Three Public Libraries United in one Group



Wanamaker's Three Exclusive Stores United in One Group



A New York City land mark Monument of A. T. Stewart's greatness, reconstructed and rearranged now wholly as a Woman's Store.

The New Wanamaker Building Fourteen Galleries of Furnishing and Decoration with work shops.

The Men's Section occupying the entire Main Floor of the New Wanamaker Building.

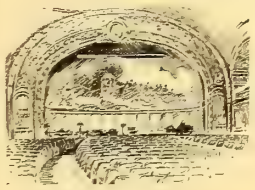
A Point of Progress in Furnishing Homes

the particulars of which are important to everybody building anew or reconstructing the old. It is now an admitted fact that we have worked out a great thought in constructing our large new building especially to install a new kind of Furnishing and Decoration business, wherein we have now upwards of three millions of dollars in fine and distinctive Furniture, Draperies and Floor Coverings and all that pertains to a home, and are able at all times to assemble and group the actual pieces of Furniture, Wall, Window and Floor Coverings and show by a staff of artistic and experienced men the harmonious furnishings of a single simple or elaborate room, or an entire mansion swung into balance and harmony, according to the individuality of the owner, with cost estimated, not by pictures or photographs, but definitely and reasonably by the actual articles. This business, just begun, is the growing quantity of the Wanamaker business, twelve years in New York and in Philadelphia for the last 48 years. Behind it there are all our valuable mistakes, and costly experiences and perfected systems, to enable us to perform in the best manner whatever we undertake.

The House Palatial is a lofty, solidly built mansion of two stories within our building, with 24 spacious rooms, furnished equally well with many of the best of the Fifth Avenue residences. Smaller and simpler buildings are in course of construction to show, beside the richest, the humblest and moderate though thoroughly artistic examples of Furnishing.

Correspondence invited, and a full staff of competent people ready to take on and execute promptly any work entrusted to us. Freightage from New York is a small matter in comparison with obvious satisfactions gained.

It pleases us to think that we have learned how to be economic and artistic and do things out of the common when desired.

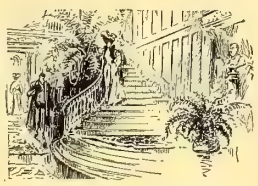


Wanamaker Auditorium.

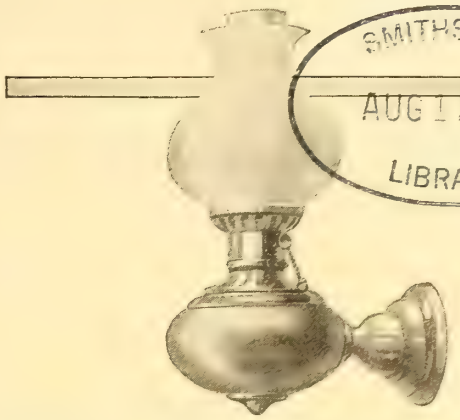
We have a little Guide Book to the Store, which we will be glad to send you. It tells much about our business and the merchandise, and will tell you about our specialized catalogues, so that you will know just what literature to ask for, when you want to know about our stocks. A postal card request will bring it. Address

JOHN WANAMAKER

NEW YORK



Foyer Hall, House Palatial.



THE increasing demand for the older order of Colonial work has led to the use of many lamps of that period for the illumination of our more modern homes, which add much charm to the beauty of the surroundings when in harmony with the decorative scheme.

The ENOS COMPANY Makers of Lighting Fixtures

NEW YORK

Office and Factory: 7th Av. and 16th St. Salesrooms: 5 West 39th St.

Boston: H. F. Esterbrook, Inc., 9 Park Street

Chicago: W. K. Cowan & Co., 203 Michigan Blvd.

Baltimore: 519 North Charles St.

San Francisco: 1748 California St.

Pittsburg: G. P. Norton, Century Building

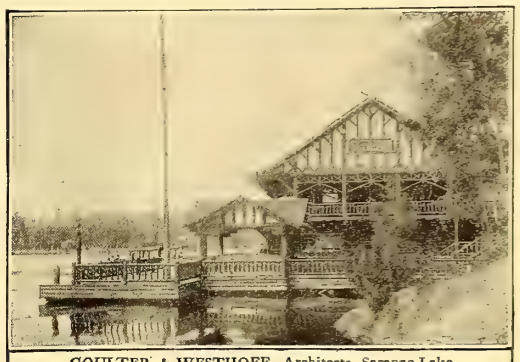
Toronto: 94 King St. West

St. Louis: N. O. Nelson Mfg. Co.

Spokane: Cutter & Plummer, Inc.

Portland, Ore.: J. C. English Co., 128 Park St.

Seattle: Cox & Gleason, 1914 Second Ave.



COULTER & WESTHOFF, Architects, Saranac Lake

Renowned for Their Durability **Admired for Their Artistic Effects**

DEXTER BROTHERS'

English Shingle Stains

Cost 50 per cent. less than paint and preserve your shingles 50 per cent. better.

Send for samples and ask for our New Ideas for Stains.

DEXTER BROTHERS COMPANY

209 Broad Street, BOSTON

AGENTS: H. M. Hooker Co., 128 W. Washington St., Chicago; W. S. Hueston, 6 E. 30th St., New York; John D. S. Potts, 218 Race St., Philadelphia; W. W. Lawrence & Co., Pittsburg, Pa.; F. H. McDonald, 619 The Gilbert, Grand Rapids, Mich.; F. T. Crowe & Co., Seattle, Spokane, Tacoma, Wash., and Portland, Ore.

Sample and Circular Free.

A House Lined with Mineral Wool

as shown in these sections, is ***Warm in Winter, Cool in Summer,*** and is thoroughly DEAFENED.

The lining is vermin-proof; neither rats, mice, nor insects can make their way through or live in it. MINERAL WOOL checks the spread of fire and keeps out dampness.

Correspondence Solicited.

U. S. Mineral Wool Co.

140 Cedar St., NEW YORK CITY.

Antiques

Photographs and descriptions of genuine antique pieces sent on request. List your wants of antiques with me.

RALPH WARREN BURNHAM

IPSWICH IN MASSACHUSETTS

Wall Papers and Wall Coverings *A Practical Handbook*

For Decorators, Paperhangers, Architects, Builders and House Owners, with many half-tone and other illustrations showing latest designs

By ARTHUR SEYMOUR JENNINGS

Includes characteristic designs in vogue to-day. Gives reliable information as to the choice of Wall Papers and describes the practical methods of applying them

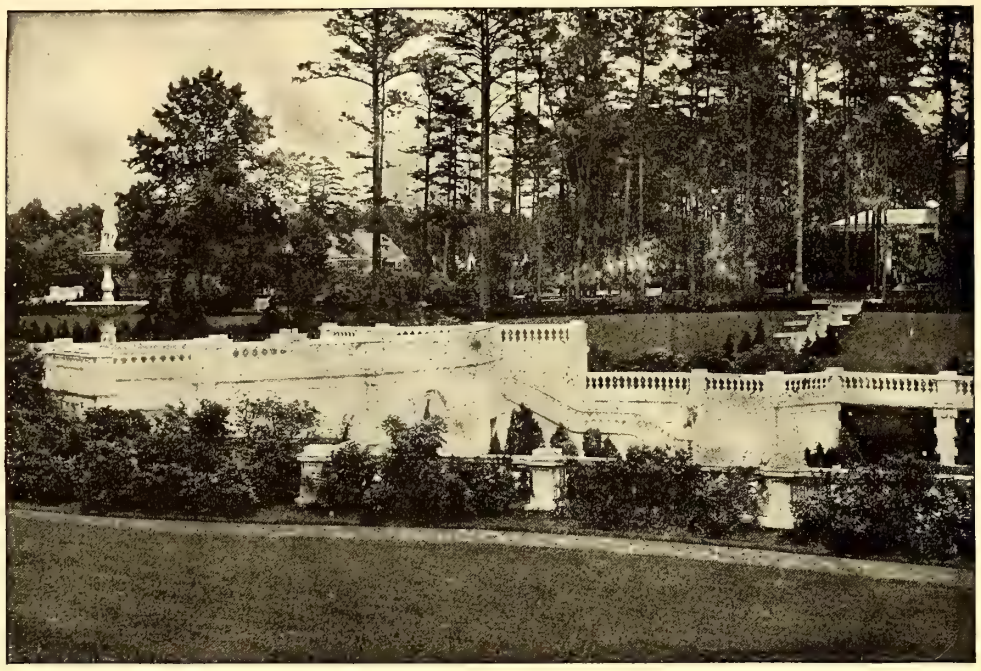
One Large 8vo Volume. Cloth. Price $2

MUNN & CO., 361 Broadway, NEW YORK

American Estates and Gardens

By BARR FERREE

Editor of "American Homes and Gardens," Corresponding Member of the American Institute of Architects and of the Royal Institute of British Architects



4to. 11x13½ inches. Illuminated Cover and 275 Illustrations. 306 Pages.

Price, $10.00

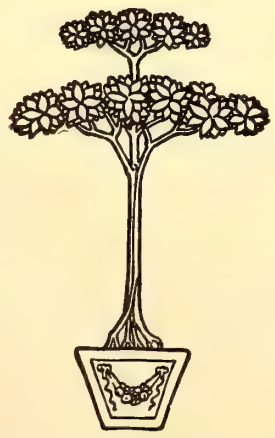
A sumptuous book, dealing with some of the most stately houses and charming gardens in America. The illustrations are in nearly all cases made from original photographs, and are beautifully printed on double coated paper. Attractively bound. The book will prove one of the most interesting books of the year and will fill the wants of those who desire to purchase a luxurious book on our American Homes.

Munn & Company
Publishers of "Scientific American"
361 BROADWAY, NEW YORK

THE NEW AGRICULTURE

By
T. BYARD COLLINS

8vo. Cloth. 376 Pages
100 Illustrations
Price, $2 00, Postpaid



THIS new and valuable work sets forth the changes which have taken place in American agricultural methods which are transforming farm life, formerly so hard, into the most independent, peaceful and agreeable existence. Farm life to-day offers more inducements than at any previous period in the world's history, and it is calling millions from the desk. The present work is one of the most practical treatises on the subject ever issued. It contains 376 pages and 100 illustrations.

In brief, the Contents are as follows:

CHAPTER I. This chapter contains a general statement of the advantages of farm life.

CHAPTER II. Deals with the vast systems of irrigation which are transforming the Great West, and also hints at an application of water by artificial means in sections of the country where irrigation has not hitherto been found necessary.

CHAPTER III. Gives the principles and importance of fertilization and the possibility of inoculating the soil by means of nitrogen-gathering bacteria.

CHAPTER IV. Deals with the popular awaking to the importance of canals and good roads, and their relation to economy and social well-being.

CHAPTER V. Tells of some new interests which promise a profit.

CHAPTER VI. Gives a description of some new human creations in the plant world.

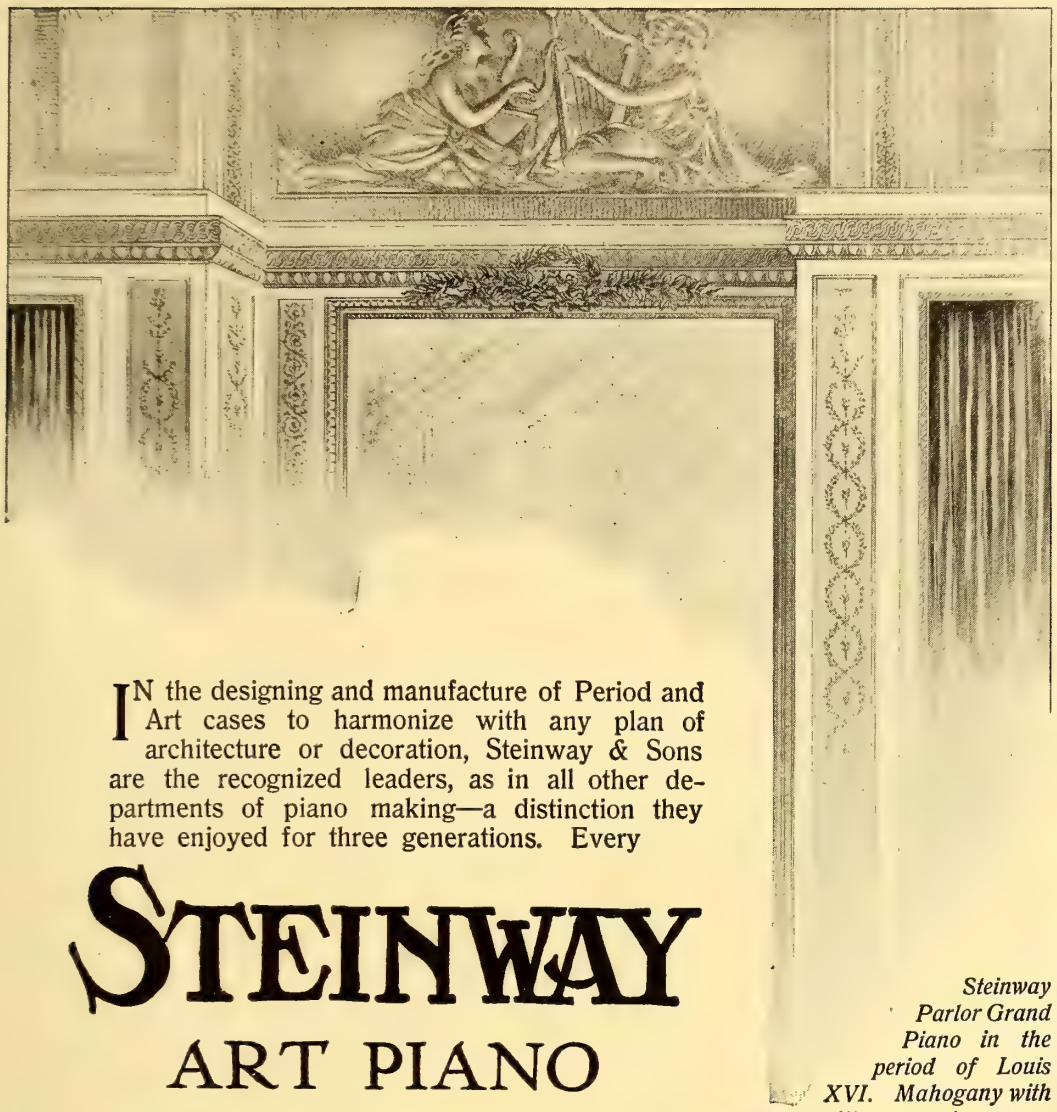
CHAPTER VII. Deals with new varieties of grain, root and fruit, and the principles upon which these modifications are effected and the possibilities which they indicate.

CHAPTER VIII. Describes improper methods in agricultural practice.

CHAPTER IX. Devoted to new machinery by which the drudgery of life on the farm is being eliminated, making the farm a factory and the farmer the manager of it.

CHAPTER X. Shows the relation of a body of specialists to the American farmer, who can have the most expert advice upon every phase of his work without any expense whatever to himself.

MUNN & CO., Publishers 361 Broadway, NEW YORK



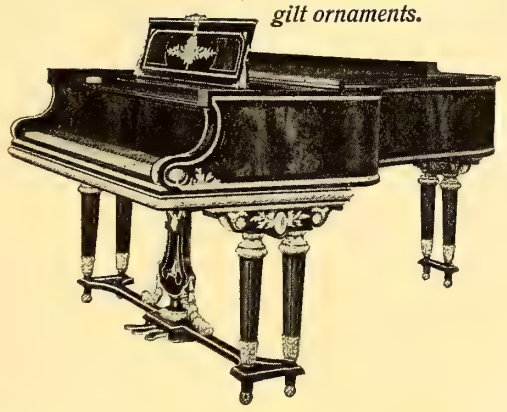
IN the designing and manufacture of Period and Art cases to harmonize with any plan of architecture or decoration, Steinway & Sons are the recognized leaders, as in all other departments of piano making—a distinction they have enjoyed for three generations. Every

STEINWAY

ART PIANO

is a true representation of its respective period—a veritable gem of beauty and perfection. A visit to the Steinway Studios will reveal that, in these masterpieces of piano-craft, music and decorative art are so deftly blended that they at once command the admiration and praise of architect, artist and connoisseur.

STEINWAY & SONS
Steinway Hall
107-109 East 14th Street, New York
(Subway Express Station at the Door)



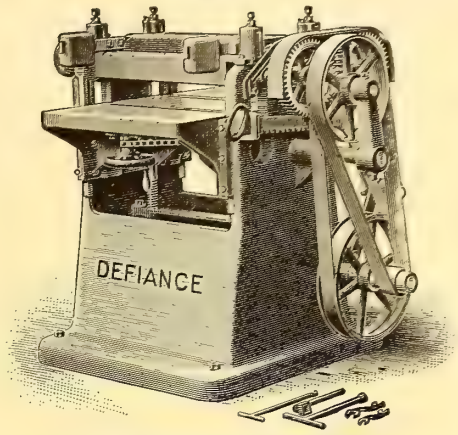
Steinway Parlor Grand Piano in the period of Louis XVI. Mahogany with gilt ornaments.

"DEFIANCE"

Wood-Working Machinery

For Pattern Shops and
General Wood-Work

Invented & Built by
THE DEFIANCE MACHINE WORKS
DEFIANCE, OHIO



24-Inch Single Surface Planer

The Oil for Every Car

The cost of maintaining your automobile and the amount of service it gives you depend to a great extent on the use of the proper oil. No matter what the make of your car, its type or purpose, the right grade of Vacuum MOBILOIL will give it perfect lubrication at all times and under all conditions.

VACUUM

MOBILOIL

is made in six different grades. One of these grades is prepared especially for the perfect lubrication of your car. By the use of this one grade you will save time and trouble and avoid expensive experiment.

Send for booklet listing every automobile made and the grade of MOBILOIL prepared for it. Thereafter you need only watch the label on the can; the car will take care of itself. The book is free; its facts on the science of lubrication are invaluable. Gives track records to date, and other potent motor pointers.

MOBILOIL, in barrels and in cans with patent pouring spout, is sold by dealers everywhere. Manufactured by

VACUUM OIL CO.,
Rochester, N. Y.

Health and Rest

are the two main objects of a country residence. The stillness which prevails away from the bustle and hum of a great city is particularly beneficial to tired nerves. City people are careful, therefore, to surround their country places with an atmosphere of quiet and restfulness. Many of our customers are people with country homes who have had their nerves sorely tried by the noisy clanging of a windmill's wheel (the source of their private water supply), until, in a spirit of desperation, they have felt compelled to remove the windmill and make trial of a

Hot-Air Pump

The action of this pump being noiseless, Health and Rest have come back again along with natural quiet and repose. In this way the Hot-Air Pump has proved itself a wonderful therapeutic agent, besides being the most reliable domestic water supply known.

Remember that these pumps are not steam-engines, but machines of low power which cannot explode, operated solely by hot air, automatic in their action, requiring no skilled attention, so simple that any servant or farmer's boy can start and stop the little flame that gives them life. The cost of operation is almost nil, while the delivery of water is absolutely certain at all times and seasons.

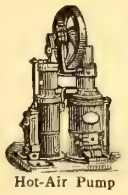
Be sure that the name "REECO"-RIDER or "REECO"-ERICSSON appears upon the pump you purchase. This name protects you against worthless imitations. When so situated that you cannot personally inspect the pump before ordering, write to our nearest office (see list below) for the name of a reputable dealer in your locality who will sell you only the genuine pump. Over 40,000 are in use throughout the world to-day.

Write for Catalogue E, and ask for reduced price-list.

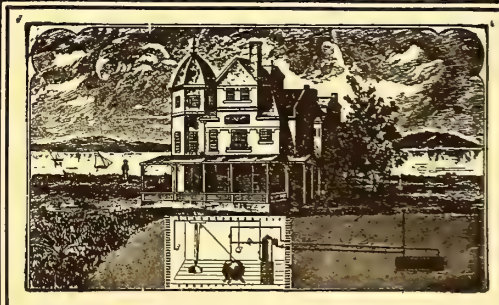
RIDER-ERICSSON ENGINE CO.

35 Warren Street, New York
239 Franklin Street, Boston
40 Dearborn Street, Chicago
40 North 7th Street, Philadelphia
234 West Craig Street, Montreal, P. Q.
22 Pitt Street, Sydney, N. S. W.

(Also builders of the new **"Reeco" Electric** *Pump.)*



Hot-Air Pump



THE **most modern, and best illuminating and cooking** service for isolated homes and institutions, is furnished by the **CLIMAX GAS MACHINE.**

Apparatus furnished on **TRIAL** under a **guarantee to be satisfactory** and in advance of all other methods.

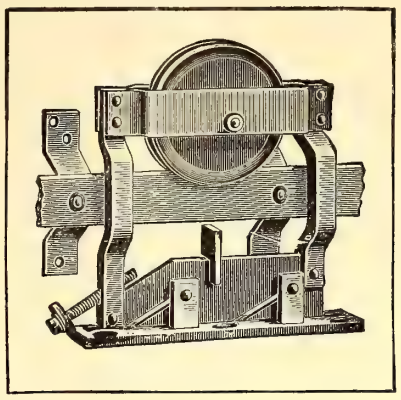
Cooks, heats water for bath and culinary purposes, heats individual rooms between seasons—drives pumping or power engine in most efficient and economical manner—also makes brilliant illumination. **IF MACHINE DOES NOT MEET YOUR EXPECTATIONS, FIRE IT BACK.**

Send for Catalogue and Proposition.

Low Price Better than City Gas or Electricity and at Less Cost.
Liberal Terms

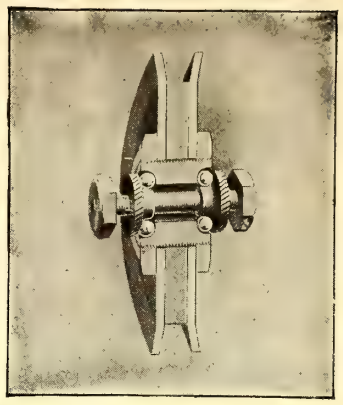
C. M. KEMP MFG. CO.
405 to 413 E. Oliver Street, Baltimore, Md.

"LANE'S BALL-BEARING"



is the

Best House-Door Hanger Made



Other Styles for Less Money Sold by Hardware Trade Send for Catalog

LANE BROTHERS COMPANY

434-466 Prospect Street POUGHKEEPSIE, N. Y.

New Papers on Concrete

Reinforced Concrete

Concrete Building Blocks

Scientific American Supplement 1543 contains an article on Concrete, by Brysson Cunningham. The article clearly describes the proper composition and mixture of concrete and gives the results of elaborate tests.

Scientific American Supplement 1538 gives the proportion of gravel and sand to be used in concrete.

Scientific American Supplements 1567, 1568, 1569, 1570 and 1571 contain an elaborate discussion by Lieut. Henry J. Jones of the various systems of reinforcing concrete, concrete construction, and their applications. These articles constitute a splendid text book on the subject of reinforced concrete. Nothing better has been published.

Scientific American Supplement 997 contains an article by Spencer Newberry, in which practical notes on the proper preparation of concrete are given.

Scientific American Supplements 1568 and 1569 present a helpful account of the making of concrete blocks by Spencer Newberry.

Scientific American Supplement 1534 gives a critical review of the engineering value of reinforced concrete.

Scientific American Supplements 1547 and 1548 give a resumé in which the various systems of reinforced concrete construction are discussed and illustrated.

Scientific American Supplements 1564 and 1565 contain an article by Lewis A. Hicks, in which the merits and defects of reinforced concrete are analysed.

Scientific American Supplement 1551 contains the principles of reinforced concrete with some practical illustrations by Walter Loring Webb.

Scientific American Supplement 1573 contains an article by Louis H. Gibson on the principles of success in concrete block manufacture, illustrated.

Scientific American Supplement 1574 discusses steel for reinforced concrete.

Scientific American Supplements 1575, 1576 and 1577 contain a paper by Philip L. Wormley, Jr., on cement mortar and concrete, their preparation and use for farm purposes. The paper exhaustively discusses the making of mortar and concrete, depositing of concrete, facing concrete, wood forms, concrete sidewalks, details of construction of reinforced concrete posts, etc.

Scientific American Supplement 1583 gives valuable suggestions on the selection of Portland cement for concrete blocks.

Scientific American Supplement 1581 splendidly discusses concrete aggregates. A helpful paper.

Scientific American Supplements 1595 and 1596 present a thorough discussion of sand for mortar and concrete, by Sanford E. Thompson.

Scientific American Supplement 1586 contains a paper by William L. Larkin, on concrete mixing machinery in which the leading types of mixers are discussed.

Scientific American Supplement 1626 publishes a practical paper by Henry H. Quimby on concrete surfaces.

Scientific American Supplement 1624 tells how to select the proportions for concrete and gives helpful suggestions on the treatment of concrete surfaces.

Scientific American Supplement 1634 discusses forms for concrete construction.

Scientific American Supplement 1639 contains a paper by Richard K Meade, on the prevention of freezing in concrete by calcium choloride.

In **Scientific American Supplement 1605** Mr. Sanford E. Thompson thoroughly discusses the proportioning of concrete.

Scientific American Supplement 1578 tells why some fail in the concrete block business.

Scientific American Supplement 1608 contains a discriminating paper by Ross F Tucker on the progress and logical design of reinforced concrete.

EACH NUMBER *of the* SUPPLEMENT COSTS 10 CENTS. A SET *of* PAPERS CONTAINING ALL THE ARTICLES ABOVE MENTIONED WILL BE MAILED *for* $3.40

Order from your Newsdealer or from

MUNN & CO., Publishers, 361 BROADWAY, New York City

MAKING A COUNTRY HOME

By E. P. Powell

IV. BERRIES AND GRAPES FOR THE HOME GARDEN

I PUT grapes over to this article, because the grape is a fruit that ought to be used as freely as the berries, and I should call it the strawberry of autumn. It is, in fact, one of the healthiest of all fruits, and might advantageously displace meat. If I had no room for a vineyard I would grow grapes all over my house, all over my barn and sheds, over my stone walls and fences, and up my hardy trees. I would have them so abundant that the children could almost live on them for two or three months, and the overflow go to chickens. Almost no one has enough grapes, and everybody likes them. It is disproved that the seeds cause appendicitis. I am growing over one hundred varieties, and we put very few into the market. There is no jelly or marmalade superior to that which is made from grapes. With careful handling in shallow baskets, covered with cotton batting, grapes can be kept until January or February in an ordinary dry sweet cellar or in drawers. I have a seedling which does not rot at all, but will dry slowly and be eatable all winter. It looks much like Gaertner and Lindley, and is very prolific.

I shall make out a list of three black grapes, three red grapes, and three white grapes. I would place first in the black varieties Worden, a prolific and high-flavored variety ripening early in September, and sweet as soon as it is colored. The bunch is large and handsome and much like Concord, only Concord is later and sour till long after it is black. Class this as (1). For (2) select Herbert, one of Rogers' Hybrids, and ripening a month later than Worden. This is a royal grape in quality and handsome in bunch, but it does not quite pollenize itself. The (3) should be Nectar. This grape is only of medium size, but it is delicious in quality, and it is in eating from September until freezing weather. If put in storage it keeps well into winter. For three red grapes I select Brighton as one of the most delicious of all grapes, and very productive—provided surely that you plant near it Worden, Moore or some other good pollenizer. Without this it will not bear at all. With Brighton as (1) I place Lindley as (2), and here again we get a grape that can not pollenize itself. For (3) take Agawam, a large red grape, with good-sized bunches, and keeping quite late. This leaves out Delaware, because the vine is delicate, and Iona—the most delicious of all grapes—because it will not resist our coldest weather; and it leaves Gaertner and Vergennes to be added when you have room. Of white grapes, of course, we will plant Niagara as (1), for it is the one grape that can not satisfy itself with big bunches and lots of them. For (2) I would add Lady as the earliest and the sweetest. It is sometimes put down as lacking quality, but with me it is unsurpassed in richness; only I can not get good crops. For (3) you might select Pocklington, not because it is the very best grape, but it has fine bunches of golden yellow fruit, and is the surest to produce in all the list that I am growing. This leaves out a few that ought surely to be included, Moore's Early for a black that is exceedingly hardy and of fine quality; Hayes, which I rank as almost unsurpassed in quality, a white grape; and it leaves out Jefferson, one of the most perfect grapes in existence, but needing a longer season to perfect it than can be got north of New York.

The grape needs a thorough spraying with

Bordeaux mixture two or three times very early in the season to prevent blight black rot and other fungus troubles. To preserve from the birds many bag them; that is, tie around the bunches paper bags. This does not hinder good ripening. With me, however, the only troublesome bird is the oriole, who leaves us about the first of September. He is a special pest because he picks into a hundred fruits, sucking a drop of juice from each, but eating none. On the whole the grape is easily grown, and gives splendid results in proportion to the trouble it causes. It will grow in any good garden soil; and for trimming you must cut away nearly all the wood for the first two years. After that tie to trellises or posts. The varieties I have named, after trimming in the fall, need no covering, but should be laid down to the ground. It is an easy matter to grow grape seedlings, and I advise you to keep a few growing, with the expectation of originating something worth the while. You should get fruit by the third year.

What we are trying to do in this article is to get at those fruits that bear very quickly after planting, and give a great abundance of food. It is just possible that you may care to sell a surplus, but for the present we want the food. Going out from the city you have your cow and your horse and your chickens. That gives you milk and eggs, and luckily you can get all the berries and currants you want by the second year. I am a believer in strawberries as much as you are, but I strenuously advise a beginner not to undertake a big strawberry bed. There is no small fruit that causes so much work, and that is so liable to be a failure. If grown for market there are always too many or too few, and strawberry bankrupts are common. The berry for you to begin with is the red raspberry. It gives enormous crops from a small bit of ground, and they need not be replanted for ten or fifteen years. The black raspberry must be replanted every four or five years, and the strawberry every second year. I have had red raspberries standing for fifteen years, and doing pretty well to the last. You have only to cut out the dead canes each year, tie up the new ones, and mulch heavily with compost. The only variety that is holding its own for common use is the Cuthbert, while the Golden Queen, a sport from the Cuthbert, is yellow. The only very early variety that has proved worth the while with me is Marlboro. The Loudon is a splendid berry in size and quality, and it is well enough for home use—not fit for shipping to market. Cuthbert sometimes kills back, but generally gives a good crop. Of the purples, which are crosses between black and red plant, Schaffer, So far as I have been able to test them, the others are in one way or another a failure. Do not be coaxed into planting highly advertised new sorts. For black raspberries I think it likely that Black Diamond and Cumberland are the two best, although Kansas is still a splendid berry for home use. Black Diamond is very early and very sweet. The Cumberland is a huge berry, very firm and large, and prolific.

With me the blackberry is a favorite, and it is a good thing for a small country home to set out a few plants, where the soil is fairly rich, or along fences—where the canes can be useful in keeping out intruders. You can let the blackberry take care of itself for a good many years, and it will bring you a good supply of fruit. When the canes have spread by suckerage, as they will, you must cut tracks through for the plow and cultivator. You must cut out the old canes each year, and after growth has ceased cut off the new canes to about six feet. The best variety for planting in limited space, or extensively, is Eldorado,

"Standard"

(Trade Mark)

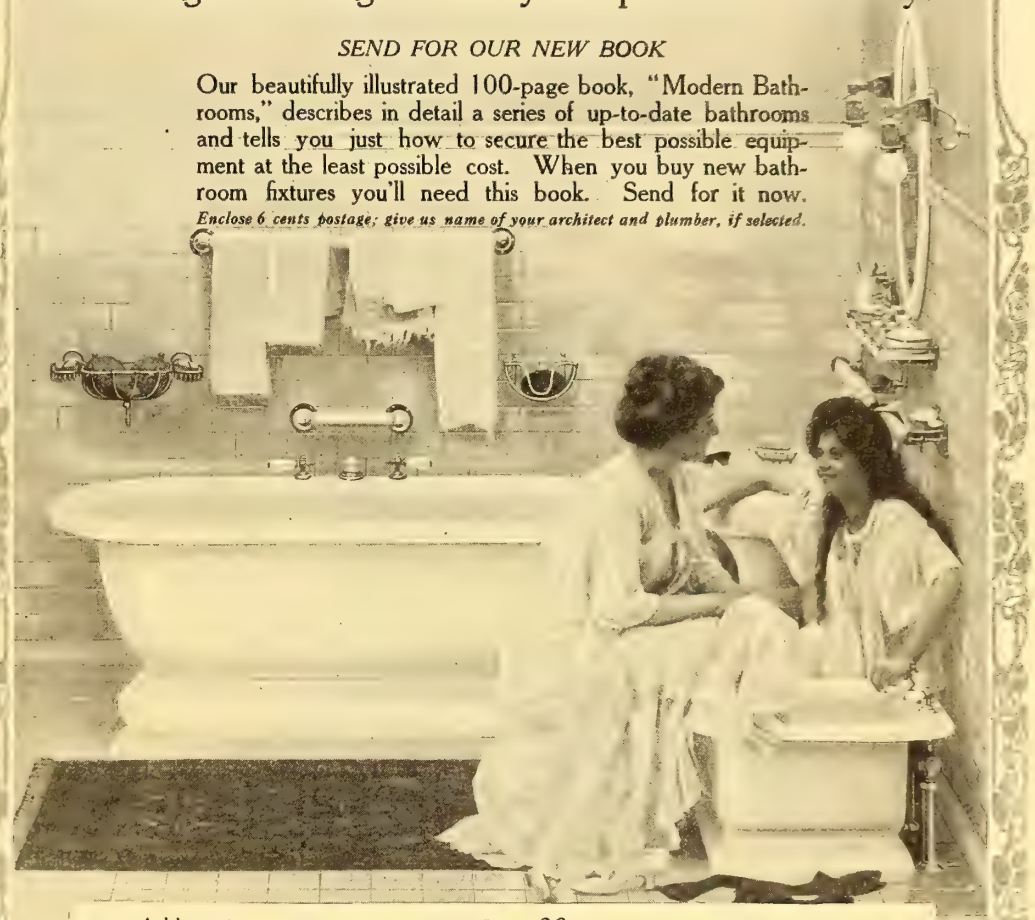
Baths and Lavatories

effectively assure to the bathroom in which they are installed the highest degree of sanitation, thorough working efficiency and permanent beauty.

SEND FOR OUR NEW BOOK

Our beautifully illustrated 100-page book, "Modern Bathrooms," describes in detail a series of up-to-date bathrooms and tells you just how to secure the best possible equipment at the least possible cost. When you buy new bathroom fixtures you'll need this book. Send for it now.

Enclose 6 cents postage; give us name of your architect and plumber, if selected.



Address Standard Sanitary Mfg. Co., Dept. 23, - Pittsburgh, Pa., U. S. A.

Offices and Showrooms, New York: 35-37 West 31st Street. Pittsburgh: 949 Penn Avenue. St. Louis: 100-102 North Fourth Street. Louisville: 325-329 West Main Street. Philadelphia: 1128 Walnut Street. New Orleans: Corner Baronne and St. Joseph Streets. Cleveland: 648-652 Huron Road, S. E. Toronto, Canada: 59 Richmond Street, East. Montreal, Canada: 39 St. Sacrament St.

Harmony in Hardware Trimmings

The matter of hardware for a home is not a detail of small importance—the selection should have your own attention. The right sort of hardware has a distinctive decorative value and the owner of the home should give expression to his own taste so that it may always be a source of pleasure and delight, chosen to harmonize perfectly with style of architecture and general scheme of ornamentation.

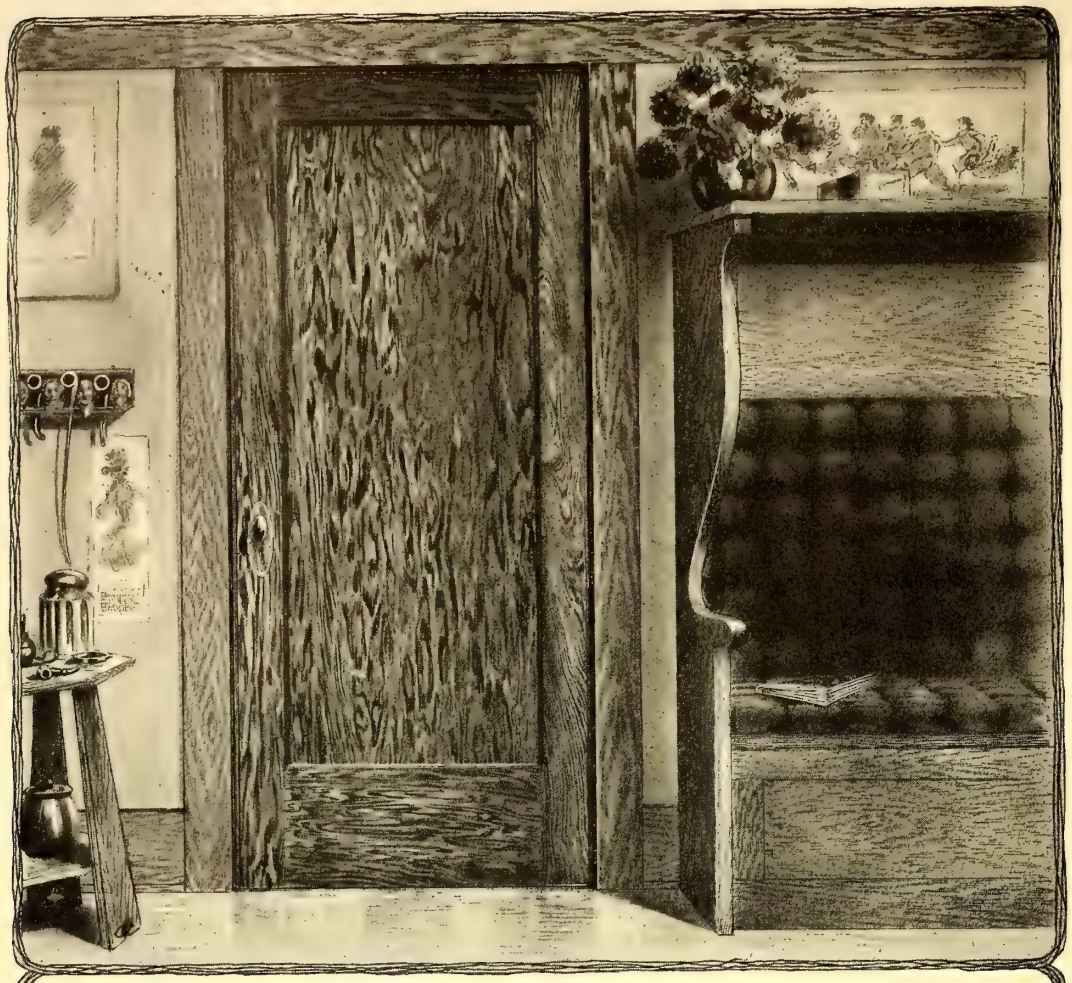
Sargent's ARTISTIC HARDWARE

is beautiful and durable—the perfection of hardware art. Over seventy designs are handsomely illustrated in

Sargent's Book of Designs—Free

together with many helpful suggestions and an explanation of the Easy Spring Principle of Sargent's Locks. The *Colonial Book* illustrates this line especially well. Both books are valuable—but sent gladly on request. Write at once for them.

SARGENT & CO., 156 Leonard St., New York



Simple—Artistic

The simple lines of this door adapt it for craftsman interiors, Dens, Libraries, Studies, etc.; its beautiful grain and finish give a note of distinction to any room.

Cross section showing construction of 1⅜ inch door.

MORGAN DOORS

The name "*Morgan*" is branded on each door.

are perfect doors. Built of several layers with the grain running crosswise, making shrinking, warping or swelling impossible. Veneered in all varieties of hardwood—birch, plain or quarter-sawed red or white oak, brown ash, mahogany, etc.

Morgan Doors are light, remarkably strong and absolutely perfect in every detail of construction. Each **Morgan Door** is stamped "*Morgan*" which guarantees quality, style, durability and satisfaction.

In our new book, "The Door Beautiful," **Morgan Doors** are shown in their natural color and in all styles of architecture—Colonial, Empire, Mission, etc., and it is explained why they are the best and cheapest doors for permanent satisfaction in any building. ***A copy will be sent on request.***

Architects: Descriptive details of Morgan Doors may be found in Sweet's index, pages 678 and 679.

Morgan Company, Dept. A, Oshkosh, Wisconsin.

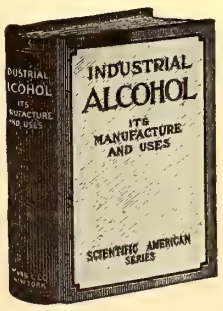
Morgan Company, Oshkosh, Wisconsin. **Morgan Sash and Door Company, Chicago, Ill.** **Morgan Company, Baltimore, Maryland.**

---

516 Pages, 107 Engravings NOW READY *Price, Four Dollars*

Industrial Alcohol

ITS MANUFACTURE AND USES



A Practical Treatise based on Dr. Max Maercker's "Introduction to Distillation" as revised by Drs. Delbrück and Lange

COMPRISING

Raw Materials, Malting, Mashing and Yeast Preparation, Fermentation, Distillation, Rectification and Purification of Alcohol, Alcoholometry, The Value and Significance of a Tax-Free Alcohol, Methods of Denaturing, Its Utilization for Light, Heat and Power Production, A Statistical Review, and the United States Law

By JOHN K. BRACHVOGEL, M.E.

THE value and significance of a tax-free alcohol have been so widely discussed in the press and periodical literature of the entire country, that it is unnecessary to emphasize the great importance of the subject, especially to our agricultural and industrial interests. For years we have been far behind the nations of Europe in this regard, and in consequence our literature has been sadly lacking in authoritative works covering this phase of industrial activity. This book was designed with the especial purpose of filling this want, and it is the latest and most comprehensive work of its kind which has been published in this country.

Few in number are those to whom this book would not prove of interest and value. The farmer, the manufacturer, the power-producer, the householder, will all find that denatured alcohol is of such importance to them, that its use and introduction will effect savings and economies which were hitherto impossible of accomplishment.

FOR SALE AT ALL BOOKSTORES

Iron Railings, Wire Fences and Entrance Gates of all designs and for all purposes

CORRESPONDENCE SOLICITED : CATALOGUES FURNISHED

FENCE

Tennis Court Enclosures, Unclimbable Wire Mesh and Spiral Netting (Chain Link), Fences for Estate Boundaries, Industrial Properties, etc.

F. E. CARPENTER CO., :: 253 BROADWAY NEW YORK CITY

WIZARD BRAND
1 BARREL EQUALS
4 WAGON LOADS
STABLE
MANURE

Sheep Manure

Kiln dried and pulverized. No weeds or bad odors. **Helps nature hustle.** For garden, lawn, trees, shrubs, fruits and house plants.

$4.00 LARGE BARREL, Cash with Order. Delivered to your Freight Station.

Apply now.

The Pulverized Manure Co., 21 Union Stock Yards, Chicago.

Price, $12.00

$12.00 Freight Paid

Chinese Wicker Basket Chairs, imported direct from **Hong Kong, China.** Weather finished, strongly made, very artistic, just the chair for porch or den. **What you have always wanted but never knew where to obtain.** Sent direct upon receipt of price. Most comfortable chair made. Satisfaction guaranteed or money refunded. Send for one to-day. Reference, German-American Sav. Bank.

HOMER HOWRY

Importer of Chinese Wicker Furniture

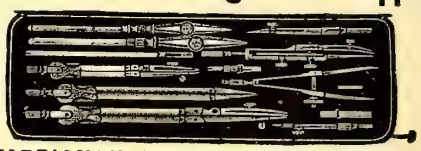
Broadway Central Bldg., Los Angeles, Cal.

St. Louis, Mo. Baltimore, Md.

F. Weber & Co.

1125 Chestnut St., Philadelphia, Pa.

Architects' and Engineers' Supplies



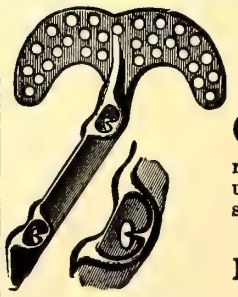
"FABRIANO" Hand-Made Drawing Papers

Superior to any other hand-made paper

F. Weber & Co.'s Illustration Boards, Air Brushes and Materials

---

STANDING SEAM ROOF IRONS



PATENTED

CLINCH right through the standing seam of metal roofs. No rails are needed unless desired. We make a similar one for slate roofs.

Send for Circular

Berger Bros. Co.

PHILADELPHIA

BRISTOL'S RECORDING THERMOMETERS

make continuous records of atmospheric temperatures, and are designed for both indoor and outdoor temperatures. Send for new catalogues.

THE BRISTOL COMPANY, WATERBURY, CONN.

NEW YORK *Branches* CHICAGO

For Five Dollars

American Homes and Gardens and Scientific American

SENT TO ONE ADDRESS FOR ONE YEAR

Regularly Six Dollars

unless you may allow me to praise one of my own productions, the King Philip. Both of these varieties are absolutely hardy; Eldorado is rather more sprawling in its growth, and its berry is a trifle larger; but for cropping King Philip is decidedly ahead. With either of these it is hardly worth your while to plant Snyder, which is perfectly hardy and very productive, but rather easily runs to small berries. Most of the other sorts, notwithstanding what the advertisers say, are not proof against a severe freeze. Rathbun and some of the others sprawl everywhere and easily kill back.

It is not at all easy to make out a satisfactory list of strawberries. I keep a test bed for thirty or forty sorts, and do not any way keep up with the new claimants for attention. I can give you a list that has stood the test for several years, and leave the newest ones for you to add as you please. It is one of the pleasures of strawberry growing to test new sorts comparatively. For (1) select Wm. Belt, a large, handsome and productive berry, of excellent quality. The growth is fine, and the fruit is given without demanding more work than the compensation. It is a grand sort every way. For (2) select Sample, a berry of large size and excellent quality, while the plant is strong and healthy. For (3) you may take Senator Dunlap, only you must look out to keep the runners within bounds. It is a great bearer of fine fruit, provided your rows do not get too matted. Now for very early plant Earliest, the best really early berry that we have. Most of the early sorts are sour or small. I will add, that of the new berries the two best that I have tested are Stevens and Abington, while Cardinal is unquestionably something great. But when you get into strawberry planting you will have some new great things every year. In the South I am planting Climax and Goree, with great satisfaction, while the old Bubach has renewed its youth in our sandy soil. If you do not intend to pay much attention to your strawberry bed and will confine yourself to one sort, Wm. Belt is good enough for anybody. There are some remarkable sorts, that respond with huge berries for constant attention and high fertilization. I dislike to pass by a lot of noble sorts that I have cultivated, and still intend to cultivate. Your strawberry bed must be as clean as your kitchen floor; it must be fertilized with absolutely clean compost; that is, you must not put on it manure that is full of seeds; you must renew it at least every second or third year; you must provide some way of irrigating it, if on a dry slope. The best way is to have pipes running through the ground with jet holes, and stop cock above, which can be turned to let on the water when needed. Never sprinkle your bed. It does more harm than good.

I grow currants for market, but I grow them also because they are the most important of the small fruits for home use. The currant bush always went with the pioneers from Massachusetts and Connecticut westward. Every settler had a few currant bushes if nothing else. The bush will give you some returns if neglected, but to do its noblest it needs to be well fed. Cut out the old wood when it gets brittle, and keep the new suckers cut out, excepting a few of the best to take the place of the old canes. I have made careful test of most of the new sorts, and I have also started a large number of new seedlings. Of these the handsomest bush is London Market, which forms a little tree, and suckers very little. This currant is a very handsome bright red. It gives about three quarts to a well grown bush. Fay is a larger currant, and very closely resembles La Versailles. The currant is about the size of Cherry, but the Cherry bush is brittle, and seldom prolific. Fay yields

(*Continued on page xxiii.*)

The Pleasure of the Porch

is increased many fold by the use of Vudor Porch Shades. They make the porch available at any hour of the hottest day—a cool, shady, secluded retreat, breeze-open, but protected from the sun's glare and heat.

Vudor Porch Shades are made of wide strips of linden wood firmly bound with strong seine twine. They can be seen through from the inside, but not from the outside. They are artistically stained with water-proof colors in greens and browns and are in keeping with the finest residence. They last for years. Vudor Porch Shades must not be confused with the flimsy, ragged and cheap-looking bamboo or imported screens. Vudor Porch Shades come in various widths, and are inexpensive; single shades cost from $2.25 up, according to width, and an ordinary porch can be completely equipped for $5 to $10.

Write for Booklet and Name of Your Local Dealer

We will send you free upon receipt of a postal card request, the beautiful Vudor booklet fully describing and illustrating in actual colors Vudor Porch Shades and Vudor Re-enforced Hammocks. With the booklet we will send you name of local dealer in your town who sells our goods. Write to-day.

HOUGH SHADE CORPORATION, 240 Mill Street, JANESVILLE, WISCONSIN

The background of this advertisement shows section of a Vudor Porch Shade, actual size.
The genuine Vudor Porch Shades always bear the Vudor aluminum name-plate.

Enametile
THE NEW TILE

For Walls, Ceilings, Wainscots in Bathrooms, Halls, Vestibules, etc. Reproduces the effects of Ceramic and Encaustic Tiles at one-third to one-half their cost.

Wherever tile can be used, **Enametile** can be used to better advantage. Besides its distinct economic superiority, it is of greater practical utility, being sanitary, germ-proof and vermin-proof. It is readily cleaned with soap and warm water.

Enametile is flexible metal, embossed and highly enameled, to perfectly reproduce the effect and coloring of the most artistic tiling. It will not crack, break or loosen.

Enametile Art Portfolio Free

Illustrating many beautiful designs of **Enametile** in original coloring. Investigate **Enametile.** It will more than pay you, more than please you. Plans and estimates furnished you direct or your architect or contractor.

New York Metal Ceiling Company

544 West 24th Street, New York

Sole Manufacturers. Makers of Metal Ceilings for Residences and Public Buildings. Catalogue sent **Free.**

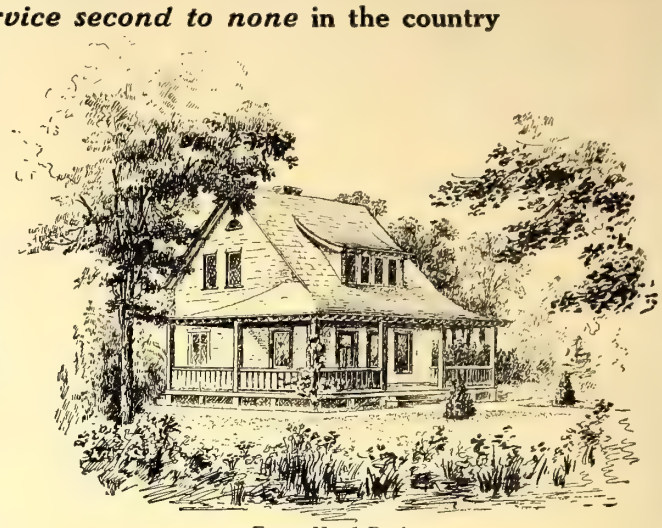
GOING TO BUILD?—By All Means Consider This

We will *save you money* on plans and give you *service second to none* in the country

From No. 3 Book

Through our three handsome books of Residence Designs, we are supplying the need for practical and successful plans at the lowest practical price. Every set of plans ordered is furnished in duplicate—triplicate, if you need them, and you can have the house just as you want it because we write the specifications to conform to your desires. No stereotyped specifications. No extras or strings tied to the price of plans.

The books are as follows, sent prepaid on receipt of price.



From No. 1 Book

No. 1. 25 Designs of Residences ranging in price from $1,500 to $5,000 . . . $.50
No. 2. " " " " " " " " $5,000 to $20,000 . . . $1.00
No. 3. " Cement Designs of Residences ranging in price from $2,000 to $20,000 $1.00

Photographic cuts of Flat and Apartment Houses, Schools, Theatres, Clubs, Churches, etc., 10c. each. Note: We *rebate* price of books or cuts on first order for plans.

ARTHUR G. LINDLEY CO., Architects, Parker Building, Schenectady, N. Y.

Dept. C. Bank and Business References

Accurate information regarding THE WORLD'S INDUSTRIAL PROGRESS is a necessity of MODERN BUSINESS LIFE, as well as a subject of ABSORBING INTEREST for every thinking man and woman.

For nearly sixty-five years the

Scientific American

has been the most widely quoted authority on all matters relating to the progress made in the fields of discovery, invention and scientific news.

Free from dry technicalities, it tells the story of the WORLD'S PROGRESS in a fascinating and practical manner, which makes its weekly visits welcome to the entire family. It is unique among periodical literature because it contains authoritative information which cannot be obtained from any other source.

Its regular perusal is in itself a liberal education in the subjects which make the marvelous achievements of the present age possible.

Subscription price, $3 per year.

Subscribe Now for the year 1909 and we will send you the numbers for **November and December, 1908** (including the Special Engineering Number) **ABSOLUTELY FREE.** In other words, fourteen months for the price of one year's subscription.

MUNN & CO., 361 Broadway, New York City

American Homes and Gardens

gives its readers the experience of experts in solving the most difficult HOME PROBLEMS. It is a thoroughly practical magazine, having the word "Home" for its keynote.

HOW TO BUILD THE HOME

Floor plans and details of construction of houses of moderate cost as well as more pretentious mansions are a feature of each issue.

HOW TO DECORATE THE HOME

The most experienced decorators in the country describe how the best and most artistic results are attained from the point of expenditure, and the more important one of satisfaction.

HOW TO PLAN AND LAY OUT THE GARDEN

The frame of the House-picture is the garden, and success in its treatment means that each tree and shrub is correctly placed as well as properly grown, hence this department will be found most helpful.

OUTDOOR LIFE AND AMUSEMENTS, ARTICLES ON HOUSE INDUSTRIES,

every phase of country life is authoritatively discussed from month to month in its pages. "American Homes and Gardens" is conceded to be the handsomest magazine published in America. Its beautiful cover printed in colors changes each month, and is always a work of art. **Subscription price, $3 per year.** If we receive your order for a year's subscription now we will send you the November and December, 1908, numbers free; in other words, fourteen months for price of a year's subscription.

MUNN & CO., 361 Broadway, New York City

RATS KILLED BY SCIENCE

By the use of the wonderful bacteriological preparation, discovered and prepared by Dr. Danysz of Pasteur Institute, Paris, science has at last found the only successful method for exterminating rats and mice.

Used with striking success for the past few years in England, Scotland, France, Holland and Russia.

DANYSZ VIRUS

contains the germs of a disease peculiar to rats and mice only, and is absolutely **harmless to birds, human beings and other animals.** The rodents always die in the open, because of feverish condition. The disease is also contagious to them. The Virus is easily prepared and applied.

How much to use: A small house, one tube; ordinary dwelling, three tubes (if rats are numerous, not less than six tubes). One or two dozen for large stable with hay loft and yard. Three to six tubes per acre in case of open fields, game preserves, etc. Price: one tube, 75c.; three tubes, $1.75; one dozen, $6.00 delivered.

INDEPENDENT CHEMICAL COMPANY
Dept. Z, 25 Old Slip New York, N. Y.

OLD COLONIAL CANDLE STAND $5

Used also for a Palm, or Smoker's Stand. Solid Mahogany, 22 in. high, top 12 in. in diameter, carved pedestal, claw feet. I make Highboys, Lowboys, Sofas, Secretaries, Sideboards, Chairs, and Colonial Reproductions of *all* kinds at *lowest prices*. Write me what you want and I will send cuts and prices.

Peter Emerson, 1113b P. O. Sq. Bldg., Boston, Mass.

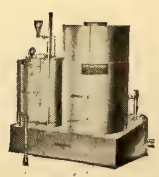
FINE HARDWOOD FLOORS

Most economical, healthful and satisfactory—for old or new houses, different patterns to match furnishings. Outwear carpets. Stocks carried in the leading cities.

PLAIN OR ORNAMENTAL. THICK OR THIN.

Write for PATTERN CATALOGUE

THE INTERIOR HARDWOOD CO. MFTR'S INDIANAPOLIS



Country Homes

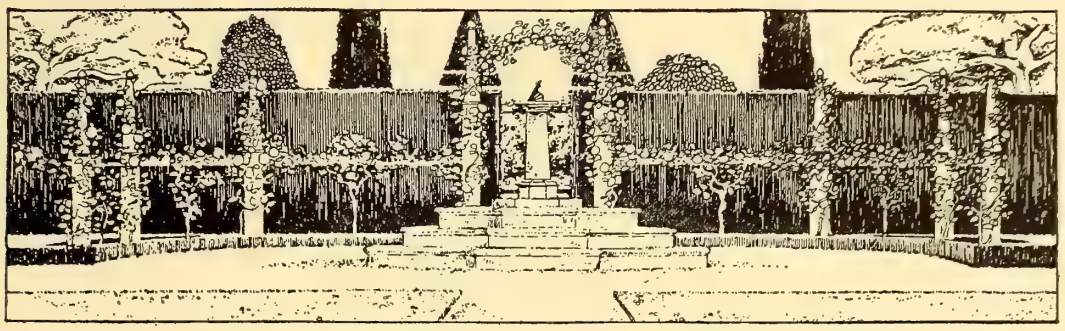
may enjoy city comforts and conveniences *at less cost* than Kerosene, Acetylene or Electricity, with none of their dangers, by using the ***Automatic***

Economy Gas Machine

Produces light, kitchen and laundry fuel. Lighted the same as electric, but without batteries. Write for booklet, *"The Economy Way."*

ECONOMY GAS MACHINE CO., Sole Mfrs.,
437 Main Street East, Rochester, N. Y.

The Garden in Your Town



IS it a success? If so, the Garden Competition Editor of American Homes and Gardens wants to know about it—he will pay $200 in prizes for the five best-planted, developed and successful suburban or village gardens. Write to the Garden Competition Editor and tell him how you planted your garden and what success you had with it; tell him of the plants with which you have had the best results, and also those which have been failures. Send him a good photograph and a plan of the garden. *We want you to help us so that we may help others to beautify their surroundings. You need not be a skilled writer to tell a story of your garden success. Tell it in your own way.*

$200 for Prizes

For the best garden received we will pay:

For the First,	- - -	$100.00
For the Second,	- -	50.00
For the Third,	- -	25.00
For the Fourth,	- -	15.00
For the Fifth,	- - -	10.00

Conditions

Competitors for the prizes must comply with the following conditions:

1. A general description of the garden, giving the size of the plot and the kind of plants used in planting.
2. Drawings of the plot are to be made, preferably on a scale of eight feet to the inch, showing the positions of the various plants and shrubs.
3. Photographs of the garden are to be sent printed on solio paper and should not be less than 5 x 7 inches in size. If possible to do so, please also send a photograph showing the garden before planting.
4. Descriptions, photographs and drawings are to be marked with a pseudonym, which is to be enclosed in a sealed envelope containing the name and address of the competitor. As soon as the judges have decided upon the five best gardens they will notify the Editor, who will open the envelope bearing the proper pseudonym and containing the competitor's true name. The competitor will be notified by the Editor that he has won the prize.
5. The Garden Competition Editor reserves the right to publish in American Homes and Gardens all gardens which in the opinion of the judges are worthy of honorable mention. The names of those whose gardens are reproduced will be published with the photograph.
6. Contributions are to be submitted to the Garden Competition Editor, American Homes and Gardens, 361 Broadway, New York.
7. The Garden Competition closes September 15, 1909. Contestants need not be subscribers to American Homes and Gardens, and no charge or consideration of any kind is required. *No photographs, manuscripts or plans will be returned.*

BURLINGTON Venetian and Sliding BLINDS

Venetian Blind for inside window and outdoor veranda. Any wood; any finish to match trim.

SCREENS AND SCREEN DOORS

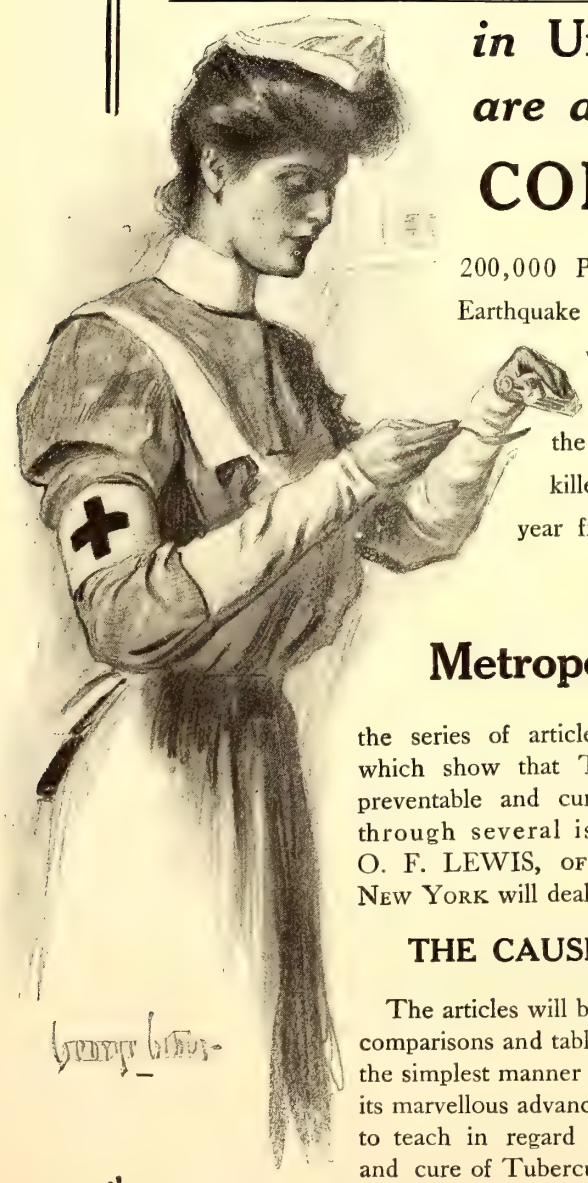
¶ Equal 500 miles northward. Perfect privacy with doors and windows open. Darkness and breezes in sleeping rooms.

Sliding Blinds for inside use. Require no pockets. Any wood; any finish.

WRITE FOR OUR CATALOGUE, PRICE-LIST AND PROPOSITION TO YOU

BURLINGTON VENETIAN BLIND CO., 975 Lake St., Burlington, Vermont

Eleven Per Cent *of the* Deaths *in* United States alone *are due to* CONSUMPTION



200,000 Persons were killed by the recent Earthquake in Italy, and the nations of the world are aroused to noble self-sacrifice in an endeavor to allay the sufferings. Yet fully as many are killed here in United States alone each year from Tuberculosis. Think of it!

Read in the

Metropolitan Magazine

the series of articles which has been prepared and which show that Tuberculosis is a communicable, preventable and curable disease. The series will run through several issues. The first, in APRIL, by O. F. LEWIS, OF THE CHARITY ORGANIZATION OF NEW YORK will deal with

THE CAUSES OF CONSUMPTION

The articles will be fully illustrated with striking charts, comparisons and tables, and will convey to the reader in the simplest manner all that modern medical science with its marvellous advancement of the past few years is able to teach in regard to the cause, prevention and cure of Tuberculosis.

CONSUMPTION CAN BE AVOIDED AND CURED

Place Your Order for the Entire Series at once.
The APRIL Issue will be quickly sold out.

THE METROPOLITAN MAGAZINE
3 WEST 29th STREET, NEW YORK CITY

Bungalows and American Homes

Design No. 2, Built in California and Iowa—Cost $2,200

Our handsome 100 page, 8x11 book of Bungalows, Mission, Colonial, English timbered and concrete houses for 1909 shows interiors, exteriors, and floor plans and actual cost to build. **Figures that you can rely upon.** These designs are photos of structures **we have built** in California and throughout the country—not theoretical pen pictures. Bungalows rent and sell at sight, and are an excellent investment. Price of book $1.00, P. O. or express order, prepaid. Sample folder free.

Brown Bros., Architects, 918 Security Bank Bldg., Cedar Rapids, Iowa

Willowcraft

is the only durable line of WILLOW FURNITURE made in the United States.

We are the manufacturers, and will send this sample chair for $7 freight prepaid anywhere east of the Mississippi River. Write for our catalogue of 150 other patterns.

The Willowcraft Shop
Box A
North Cambridge, Mass.

PARQUETRY AND HARDWOOD FLOORS

Plain or Ornamental

Old Style Carpets do not meet the requirements of the modern house; Parquetry Flooring is now holding their place. This is everlasting, inexpensive and most pleasing in effect. Write for designs. Red Oak Flooring ⅜x1½ in. for room 10x12, $9.60. Mantels, Tile, Grilles, Fly Screens.

W. F. OSTENDORF, 2923 N. Broad St., Philadelphia

Van Dorn Iron Works Co.

PRISON, HOUSE & STABLE WORK

JOIST HANGERS
LAWN FURNITURE
FENCING, ETC.

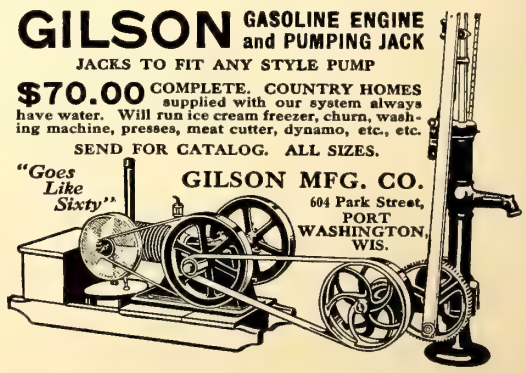
CLEVELAND, OHIO

GILSON GASOLINE ENGINE and PUMPING JACK

JACKS TO FIT ANY STYLE PUMP

$70.00 COMPLETE. COUNTRY HOMES supplied with our system always have water. Will run ice cream freezer, churn, washing machine, presses, meat cutter, dynamo, etc., etc.

SEND FOR CATALOG. ALL SIZES.



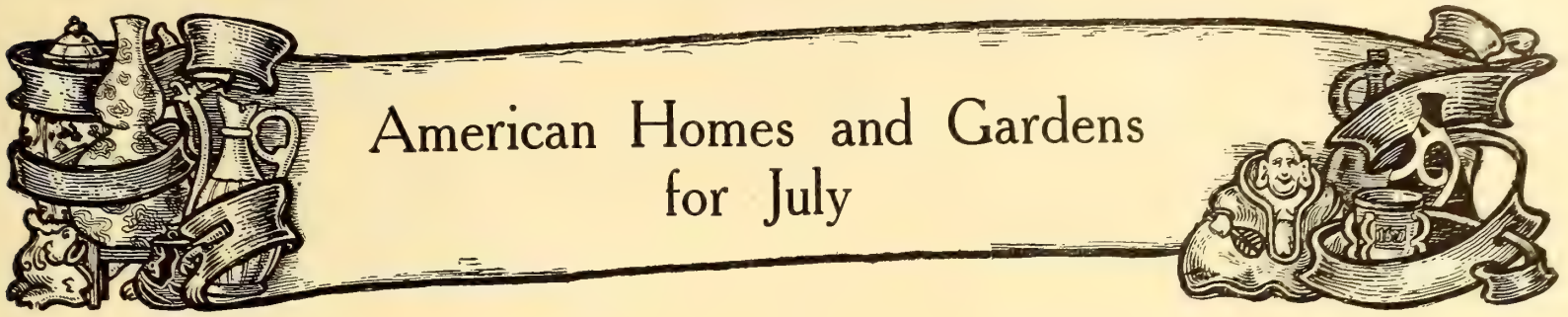
GILSON MFG. CO.
604 Park Street,
PORT WASHINGTON, WIS.

PREVENTS DRAFTS, DUST AND WINDOW RATTLING.

IVES' PATENT Window Stop Adjuster.

PATENTED.

The only Stop Adjuster made from one piece of metal with solid ribs and heavy bed that will not cup, turn or bend in tightening the screw. Manufactured only by **The H. B. IVES CO., New Haven, Conn., U. S. A.** (Fifty-page Catalogue Mailed Free.)



An Architect's Suburban Home at White Plains, N. Y.

The beautiful country place of Mr. John M. Carrere, the senior member of the noted firm of architects, Carrere & Hastings, is the opening article of the July number. The description has been prepared by Barr Ferree, and forms an interesting chapter in his series of papers on the "Homes of American Artists." Mr. Carrere's house is simple and unpretentious, quite unlike the monumental work with which his name is most associated. The beautiful photographs, prepared expressly for this article, reveal many points of charm and interest.

The Wild Mushroom

Benjamin W. Douglas writes at length on the subject of the wild mushroom, illustrating his paper with a complete series of new photographs that abundantly supplement the text. The article is an important contribution to the study and knowledge of these little known and almost unappreciated plants.

Small Houses of Small Cost

An interesting group of small houses at small cost is described by Francis Durando Nichols, with numerous illustrations and an illuminating text that describes the essential details of the various houses shown. Prospective builders and home-makers will find many useful suggestions in this helpful article.

The Profitable House to Build

The house with a guaranteed cost is designed by Joy Wheeler Dow, who describes it in his delightful manner and shows a design of unusual interest and beauty. This unique series of papers is attracting wide attention, and the personal note in Mr. Dow's work gives special importance to the forthcoming number.

A Naturalistic Garden

"Glenbrook" is a garden at Newburgh, N. Y., which has been designed and planted by its owner, who tells in this article just what he did, why he did it and the results obtained from his work. The article is handsomely illustrated and is concerned with a garden of individual type. It is a garden neither large nor elaborate, but one of distinct individuality and importance.

A Reclaimed Dwelling.

Paul Thurston describes and illustrates a deserted house at Stoke Pogis, Villa Nova, Pa., which had long been neglected and tells how it was transformed and modernized into a habitable dwelling. It is a thoroughly practical article and offers some helpful suggestions to those who may be confronted with a similar problem.

Curtains for the Summer House

One of the most difficult problems which confronts every housewife at one time or another, is the curtaining of the windows of her home. Gertrude M. Walbran offers some timely suggestions on this summery subject that are of quite unusual interest. The illustrations help to explain the ideas brought forward in the text.

A Stucco Summer Home

The summer home of Mr. E. S. Williams, at Nahant, Mass., is described by Charles Chauncey, and shown in great detail by a number of unusually beautiful photographs. It is a stucco house, with windows spaced in ample breadths of wall, and is a design of rare individuality. It is an interesting house, good to see and read about.

Forest Conservation at Biltmore

The stupendous work in forest conservation that has now been completely established at Biltmore is a national undertaking of great and far-reaching proportions. Day Allen Willey summarizes some of the achievements at this notable place in a thoroughly readable article, and the next text is supplemented with handsome photographs.

The Departments

The usual departments, Monthly Comment, Correspondence and Garden Notes are maintained with their usual completeness, and are notable features of a notable number.

Vantines

The Oriental Store

SEND FOR THE BOOKLET "ORIENTAL FITMENTS FOR SUMMER HOMES"

IMPORTS FROM JAPAN, CHINA, INDIA, TURKEY, PARIS

About to Furnish a Summer Home? See Vantines!

On the eve of fitting out a Bungalow, cottage, country house, club or yacht? Stroll through the many and varied Vantine departments, note the thousand and one *appropriate* Oriental fitments at modest price marks—objects of art and utility you rarely if ever meet in the average store. You'll not wonder at the favor Oriental products have won with those who *know* what good form, true comfort, and an economical outlay mean. Remember, our artist-decorator's advice is *always* at your call.

Oriental Furniture

Cantonese Rattan, Japwood, Willow and Woven Grass, and Teakwood, peculiarly suited to country-house requirements.

Draperies, Portieres and Cushions

fram all the Orient. Unapproachable for their varied beauty, and adaptability to every scheme of decoration—inexpensive *always*.

Japanese Pictures

Water-color studies in Oriental frames. A broad and fascinating collection.

The Vantine Teas, Coffees, Condiments

and Oriental Delicacies have long served cottagers and summer folks — special 12-lb. Caddies of Vantine Teas, and 10-lb. Tins of Vantine Coffees, put up for shore or mountain use. Send for Booklet.

For Garden, Lawn, Veranda and Solarium

Japanese Bronzes, Stone Lanterns, Jardinieres and Garden Seats in Porcelain and Pottery. Specimens of remarkable beauty and distinction, gathered from all parts of the far-away East.

Lamps and Lanterns

of Vantine design—the rarest and fairest Oriental wares forming the basis of their beauty.

Floor Coverings

Oriental Rugs of every weave and size. Japanese Rugs. Mattings, Chinese and Japanese. Moodj Rugs and Oshkosh Mats.

Screens from Japan

Hand-painted and embroidered — all color schemes—every favored size.

Porcelains for the Table

—innumerable designs; all the Japanese wares.

Vases and Jardinieres

—all the favored porcelains and potteries.

A. A. VANTINE & CO.
BROADWAY, Bet. 18th and 19th Sts.
NEW YORK, N. Y., U. S. A.

Cottage Designs

THESE books offer to architects, builders, homeseekers and investors by far the most complete collection of plans ever brought out, while the price is so low as to place them within the reach of all who have an interest in the building of homes. The designs are compiled with a view to representing all grades of cost, from the simplest types of cottages, as illustrated in the first series, to the comparatively elaborate structures reaching to $10,000 or more, in cost, treated in the fourth series, so that examples are given covering nearly every requirement, with respect to cost, in inexpensive homes.

No. 1. Cottage Designs with Constructive Details

A series of twenty-five designs of cottages, most of which have been erected, ranging in cost from $600 to $1,500; together with the details of interior and exterior finish, all drawn to convenient scale, and accompanied by brief specifications. Illustrated with 53 full-page plates of floor plans, elevations and details.

No. 2. Low Cost Houses with Constructive Details

Embracing upward of twenty-five selected designs of cottages originally costing from $750 to $2,500, accompanied with elevations, floor plans and details of construction, all drawn to scale, together with brief descriptions and, in many instances, full specifications and detailed estimates of cost. Illustrated by 61 full-page plates of floor plans, elevations and details.

No. 3. Modern Dwellings with Constructive Details

A selection of twenty designs of artistic suburban dwellings erected in various parts of the country, at costs ranging from $2,000 to $5,000; embracing floor plans, elevations and constructive details, showing interior and exterior finish, and drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions, from photographs of the completed structures, and 61 full-page plates of floor plans, elevations and details.

No. 4. Suburban Homes with Constructive Details

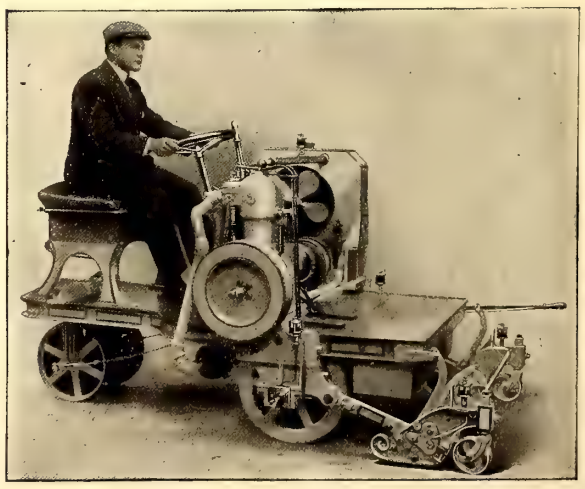
Comprising twenty selected designs of attractive suburban homes, ranging in cost from about $3,000 upward; embracing floor plans, elevations and constructive details, showing interior and exterior finish, all drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions from photographs of the completed structures, and 75 full-page plates of plans, elevations and details.

ONE DOLLAR EACH, POSTPAID
(Sold Separately)

MUNN & CO. *Publishers of* SCIENTIFIC AMERICAN
Three-Sixty-One Broadway, New York

Coldwell Lawn Mowers

Hand, Horse and Motor Power



are used by the New York City Park Department, the Capitol at Washington, and by many leading golf and country clubs and large estates of America

EXCLUSIVELY

Send for Catalogue

Coldwell Lawn Mower Company
20 Coldwell Street NEWBURGH, N. Y.

AMERICAN HOMES AND GARDENS

Price, 25 Cents. $3.00 a Year

CONTENTS FOR JUNE, 1909

PAGE

"Braemar": Gigantic Vases of White Marble Are the Distinctive Ornaments of the Entrance Front 214

Monthly Comment—The Cost of Home Building 216

Notable American Homes—"Braemar," the House of Mrs. M. Rumsey Miller, Tarrytown-on-Hudson, New York ..... *By Barr Ferree* 217

What Can Be Done in a Hand-Loom ..... *By Mabel Tuke Priestman* 220

"Druidream," the Residence of Charles W. L. Roche, Esq., Brantwood, Short Hills, New Jersey ..... *By Charles Chauncey* 223

The Begonia ..... *By Eben E. Rexford* 226

A Successful Remodeled Barn ..... *By Edith S. Welch* 228

Sixteen Houses of Moderate Cost 230

House with a Guaranteed Cost 232

A Colonial House at Portsmouth, New Hampshire ..... *By Mary H. Northend* 235

The Summer Home of Arthur W. Hall, Esq., at Crystal Brook, Long Island. ..... *By Bessie P. Lee* 239

Wall Gardens ..... *By S. Leonard Bastin* 242

A Group of Inexpensive Houses at Forest Hills, Long Island ..... *By Paul Thurston* 244

"Homewood," the Country Seat of Richard G. Tower, Esq., at Lexington, Massachusetts ..... *By Francis Durando Nichols* 248

Garden Notes—Annual Vines xiii

Correspondence:

Problems in Home Furnishing ..... *By Alice M. Kellogg* xiv

Garden Work About the Home ..... *By Charles Downing Lay* xiv

Making a Country Home: IV. Berries and Grapes for the Home Garden.

New Books.

Combined Rate for "American Homes and Gardens" and "Scientific American," $5.00 per year
Rate of Subscription of "American Homes and Gardens" to foreign countries, $4.00 a year
Rate of Subscription of "American Homes and Gardens" to Canada, $3.50 a year

Published Monthly by Munn & Company, Office of the "Scientific American," 361 Broadway, New York

CHARLES ALLEN MUNN, President - - - - FREDERICK CONVERSE BEACH, Secretary and Treasurer
361 Broadway, New York 361 Broadway, New York

[Copyright, 1909, by Munn & Company. Registered in U. S. Patent Office. Entered as second-class matter, June 15, 1905, at the Post Office at New York, N. Y., under the Act of Congress of March 3, 1879.]

NOTICE TO CONTRIBUTORS—The Editor will be pleased to have contributions submitted, especially when illustrated by good photographs; but he cannot hold himself responsible for manuscripts and photographs. Stamps should in all cases be inclosed for postage if the writers desire the return of their copy.

"Braemar"; gigantic vases of white marble are the distinctive ornaments of the entrance front

AMERICAN HOMES AND GARDENS

Volume VI June, 1909 Number 6

"Braemar": the spacious hall has real monumental character

Monthly Comment

The Cost of Home Building

MANY singular ideas are current on the subject of the cost of home building. It is not strange that this should be so, for the bizarre and the eccentric invariably attract attention that the orderly and the sedate may never receive. And, perhaps, the most singular of all notions with regard to the cost of houses is, that a beautiful home can be acquired at the most moderately conceivable cost, if one did but know how to do it. Doubtless we would all get rich if we could, and while the crop of millionaires and other wealthy folk has been tolerably abundant in America of late years, and while the methods employed by many of these fortunate folk to attain their present degree of financial eminence are fairly well known, no one will dispute the fact that there are still a few left who do not rank in this exalted category, and that, therefore, the mere knowing how to do a thing is not nearly so important as actually doing it.

THE clamor for small beautiful houses at small cost will not down. It is a delusion quite as widespread as the former notion that the earth was flat, and it is quite as difficult to get rid of. Very few people can point to such dwellings as actually in existence, but immense numbers will tell you very positively that the thing can be done, and if you happen to be conducting an architectural paper that endeavors to lay before its readers good ideas relating to every kind of a house and fail to fill your pages with illustrations and descriptions of these much sought after structures, you will be very pointedly told you do not know your business, since everyone is aware that the chief end of an editor is to give his subscribers what they want, that, and nothing more.

Now it happens that there are a good many eminently desirable things which do not exist, which never have existed, and which will never exist. There is the philosopher's stone, for one thing, that could conveniently turn everything it touched into gold. There was that famous Arabian traveling carpet, on which one had but to seat one's self to be instantly transported anywhere, regardless of the dangers of railroad or water travel or the splendid utility of the wireless. Then, there is the magic cap, the placing of which on one's head made one invisible. But why go on? Most excellent devices these, and mighty useful, too, but utterly impossible in every way. It is, in short, comparatively easy to think of things that might be obtained, but it is very different to obtain them, as everyone knows who has made the effort.

THE trouble with the small cheap house proposition is that the conditions under which houses are built are not understood or appreciated. Moreover, it is not equally admitted that good things cost good money. It is true the tendency of modern business is not this way. The goodly number of people who find intellectual relaxation in the announcement of department-store sales have no doubt grown to realize that the true standard of excellence for any article is its lowness of price. Else why these sacrifices of dollars, this distribution of bargains, this cutting of profits? Bargains can, of course, be had, and good ones, too, but good business rests on fair value and honest profits rather than on "price savings" and other devices of the cheap merchant.

THESE methods will not produce satisfactory results in house building. One may buy a table-cover at a counter sale and throw it away when weary of it without great loss. But a house is a permanent structure and can not always be disposed of even at bargain rates. It can not be built without money, and, while it is, unfortunately, not the truth that the more it costs the better it is—better artistically, hygienically and for living purposes—there is a point very soon reached below which the cost can not be reduced. The proposition is, indeed, very simple; if one would buy a handsome dress or a fine coat, one must pay a good price. It is precisely the same with houses. A handsome house, whether it be large or small, means a money cost that is absolutely unavoidable.

BUT the worst of it is the actual cost of building by no means represents the total expenditure that will be required in any building enterprise. There are a great many essential matters that enter into the cost of a dwelling that do not appear in the architect's charges. There is the land, for the first thing, the bare price of which may be a considerable item, while the cost of beautifying it and reducing it to harmony with the structure may be very considerable. The cost of furnishing must also be included in many instances, while if one is simply removing from one house to another there will be a heavy moving charge and great inconvenience and loss of time that means a money loss even if little is paid out. Nor should the cost of new insurance, the fees for title examination, the possible necessity of a lawyer and other items, most of which are absolutely necessary, be overlooked. Forgotten they are in many cases, but at least it should be obvious that if one is building a five thousand dollar house a very substantial addition must be made to this amount before the final expenditure can be footed up.

ALL these necessary items, none of which can be omitted, make the actual cost of a new house much greater than the figures set by the architect. And as these things can not be avoided, it follows that if the funds available are limited there must be cutting and trimming of the most rigid description in the construction cost. It is no wonder, therefore, that the handsome small house, the good looking little house, the attractive small dwelling is a rare and quite unknown quantity when the lowest possible cost is put upon it. One does not need costly embellishment strung, as it were, around the new house to beautify and adorn it and make it beautiful. This experiment has been tried time and time again, with disastrous results to all concerned. But one does need good materials and good taste, and these commodities command a price that is very apt to make the total cost much greater than was anticipated at the outset.

BUT what would you? A good looking house is a perpetual joy. It yields satisfaction to its owner and gives pleasure to the beholder. It is a gage of prosperity and a measure of means. It displays intelligence and consideration, and is to be commended on a hundred different grounds. Some one person may have been fortunate to have secured this result without undue outlay; but this may very likely not happen to be the case with the next man who tries a similar proposition. The low price house can, in fact, display but a single quality, and that is its inherent cheapness. If you want more you must pay more. But the person who imagines he can become possessed of a house and grounds that look as though ten thousand dollars had been expended on them for about two thousand dollars is simply looking after the impossible and the unattainable. He is hungering for the moon while still trying to remain on the surface of the earth.

The entrance driveway is the focal point in the whole estate

Notable American Homes

By Barr Ferree

"Braemar," the House of Mrs. M. Rumsey Miller, Tarrytown-on-Hudson, New York

THERE are few more beautiful roads in America than that great street known as Broadway, which, with one end, on beginning, at the Battery in New York City, continues with scarce an interruption to the capital of the State at Albany. It is a road of tremendous interest, the heart and center of the metropolis at its beginning. It passes, in its upper stages, through some of the most delightful and charming scenery in New York. A multitude of towns hang upon its edges as it pursues its majestic career and thrive by association with it. Of no place is this more true than of Tarrytown-on-Hudson, and in all its great length is it nowhere more beautiful than there. Lined with splendid trees, that seem to have grown there for ages, and with a wide and superb roadbed, there is nothing that can enhance its value as a road nor add to its beauty or utility. And here, as in many another a handsome mile, it is bordered, on either side, with magnificent country places, which include some of the most famous private houses in America, places of quite uneven merit in their buildings, but all alike in the beauty of the home grounds, in the fine taste shown in the planting and in the exquisite care with which they are maintained and kept up.

Many of the houses are almost invisible from the road, being set far back within spacious grounds. The site selected for "Braemar" is of this situation. Built on a hillside it is located at such an elevation and so far from the road as to ensure absolute privacy. The house faces the side road that bounds one border of the estate, and, being set back far from that, has the advantage of a sequestrated situation while being, as a matter of fact, almost in the heart of the town.

It is built of Harvard brick, with stone trimmings, and was designed by Messrs. Peabody and Stearns, architects, of Boston, Mass. It is a building of comparatively moderate size, and is designed in a style that combines real elegance with sobriety and moderateness. These qualities are somewhat rare in building, but are here developed in a very interesting and satisfactory manner.

The entrance-front is the principal portion of the exterior; that is to say, it is the most ornate. It discloses a center slightly recessed between two end wings, each of which is flanked with an open porch or loggia. The building is two stories in height, with a sloping roof, which contains two dormer windows in the center. The projecting ends are not actually pavilions, but are portions of the main structure slightly brought forward. They are, however, treated as pavilions, with rusticated angles of brick, and each contains a single window, a large rectangular opening, repeated in the upper floor, the two being separated by a narrow band of stone which is carried completely around the house. The loggias beyond are graceful little structures, with end piers of brick, and a pair of intervening columns front and back. The outermost of the triple opening thus formed is enclosed below with a balustrade; the central one serves as an entrance, and is reached, from without, by a flight of steps. On the outer ends is a single rectangular opening, walled with brick below. The westerly loggia has, beyond it at the back, a little open garden, walled on the two open sides, and planted in a formal manner. The ground behind the house slopes steeply and rapidly, so that the outer angle of this

garden is at a very considerable elevation above the ground. There is a magnificent view to be had from this point—looking westward over the low valley below the house, above the tops of the lofty evergreens growing down within it, beyond the great outer field or lawn, across the road and the trees and shrubbery that enclose the distant views almost with the denseness of the forest, and far across the Hudson—to the highlands of New Jersey and lower New York that shut in all the rest of the world.

As in a quite literal sense the house has but a single front, namely, that of entrance; the recessed center of this is enriched and ornamented with a somewhat notable amount of detail. This, however, is precisely confined to the exact center of the front, and consists of an ornamental doorway, with an enriched window and pediment above. All these parts are of stone. The doorway has two channeled Corinthian pilasters supporting an entablature and curved pediment. It is applied to a stone wall facing that is continued through the second story. The central window here is rectangular in form like the others—except the two on either side of the door in the first story, which have semicircular tops—and has an enriched frame, with scrolls and conventionalized ornament. A small pointed pediment surmounts this frontispiece and completes the ornamental portions of the facade. All the detail here is very well done, being designed in a quiet and effective style that yields a needed emphasis of ornament exactly where it is needed, and yet is so subdued as to be completely in harmony with the quiet architecture that distinguishes the whole exterior.

The entrance-driveway is, of course, the focal point in the whole estate. The main driveway comes directly before the door, and the connection between the road and the house has been arranged in a very successful way. A slightly raised platform was first prepared. It is encased with stone, the outermost edge being directly on the driveway. The surface within is grassed on each side of the central path that leads to the main steps. There is an extension of the whole space a short distance back from the road, and on the outer angles thus created are two gigantic vases of carved white marble. These vast ornaments are, in fact, the chief adornments of the exterior, and are at once impressive and characteristic. One may, indeed, designate them as the most distinctive feature of the whole house, yet while exterior to the structure they are in complete harmony with it, and add immensely to the importance and significance of the front.

The prevailing color of the dining-room is rich blue

The interior is planned and furnished with consummate skill, and here the really remarkable qualities of this notable dwelling are completely displayed. The scale of the whole is admirably conceived and carried out. The interior may very truly be described as monumental in character, yet it has no vast rooms or great spaces with which monumental qualities are most generally associated. On the other hand, there is nothing small about the interior. It is not a great house reproduced on a miniature scale, but a monumental treatment has been designed in due proportion to the available spaces. The effect is exceedingly fine and stately, and is a real triumph in interior design and arrangement. A vestibule, floored with marble, serves as an entrance to the reception-hall, which occupies the center of the dwelling. On one side is a small reception-room; on the other, are the coat closet, lavatory and elevator. All of these rooms are entered from the reception-hall and can not be reached from the vestibule.

The spacious reception-hall is divided into two parts by two columns that stand about midway in its depth. Directly in face are the stairs, rising to a low platform in the middle and continuing on the right to a higher platform, where they are directed toward the front of the house, where they reached the upper corridor. With the exception of the steps to the first platform all this stairway is contained in an extension of the rear at this point, so that the whole of the central space is available for the reception-hall.

The room is treated in white, with great plainly molded panels on the walls, and a very delicate yet quite elaborately enriched cornice that supports the plain ceiling. The floor is of hard wood, most of it being concealed beneath the two great rugs of green carpet. The furniture is, for the most part, upholstered in blue, green and yellow tapestry. The

farthest half of the hall has somewhat the value of an alcove. The fireplace is located here and is in the center of the left-hand wall, which is here completely lined with reddish stone. The fireplace opening has a richly ornamented molding, and the mantelshelf is carried on a band of similar carving. The overmantel is paneled, with a rectangular frame containing a molded circle within which is a painted coat-of-arms. Above, and on each side, is an elaborate festoon of flowers and foliage. All of this ornamental centerpiece is contained within two pilasters, decorated, in their upper parts, with conventionalized spirals and cherub heads.

The drawing-room on the left of the hall is a spacious apartment that extends from front to rear of the house, and is lighted by windows on three sides. It is the largest room in the house, and one of very charming elegance. Just within the doorway is a recess, that is partly caused by the necessity of finding space for the fireplace of the hall, and two great ecclesiastical candelabra of gilded brass that stand on either side of the door.

The room is divided into three parts by a pair of columns that stand against each of the longer walls. Both walls and columns are painted in ivory-white, but the paneled and decorated ceiling is left in the natural pure white of the plaster. At the farthest end, and hence against the rear wall, is the fireplace, which has a decorated overmantel of Caen stone. The color of the room is obtained from the carpet and furniture, both of which are rich crimson in hue.

The dining-room is on the opposite side of the reception-hall, and is somewhat smaller than the other two chief rooms. Its walls are arranged in large panels, which are covered with a blue and white paper of bold design. The woodwork is painted white, and the plain ceiling is supported by a very delicately decorated cornice. The prevailing color of this room is a rich blue. This is obtained partly from the wall covering, but perhaps more largely from the carpet, the curtains at the windows and the furniture, all of which are blue in tone, and form a very beautiful and effective contrast with the white of the structural parts. The fireplace on one side has a paneled chimney-breast, and a finely detailed panel above the mantel. The latter is of wood, but the fireplace facing is of white marble very beautifully veined with blue. Beyond the dining-room are the service apartments. First the butler's pantry; then, a capacious pantry for general use; then a store-closet, and the servants' dining-room at the entrance end. The kitchen and laundry are in an extension of the house and directly connected with the rooms previously named.

The fireplace wall of the hall is lined with stone elaborately carved

The grounds in which this house stands are best described as naturally beautiful. That is to say, there has been little attempt at floral enrichment, but the trees are superb, the roadbeds within the property are fine, the lawns are spacious, and the whole is maintained in very beautiful order. Some ornamental lanterns of wrought iron distributed along the drives should be mentioned.

What Can Be Done in a Hand-Loom

By Mabel Tuke Priestman

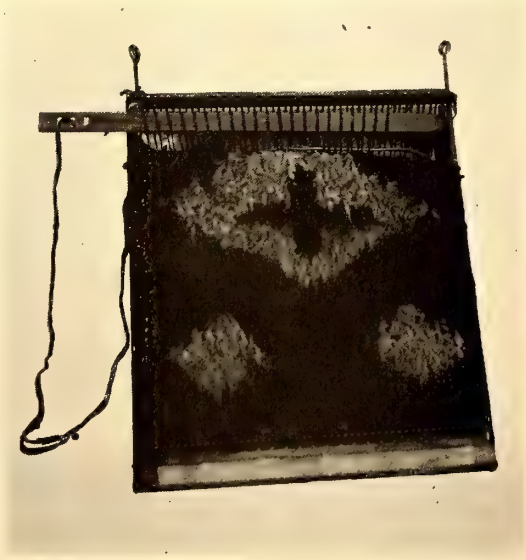
THE art of weaving is being taken up by all classes of society and by people of all ages. Old people continue to weave because it is easy to do and they are familiar with the process and can make a good living out of it. Younger women are learning to weave, because they find they can make for themselves beautiful draperies and ornament all kinds of household linen, as well as adding to the home by supplying rugs, portieres and pillows. Children from four years of age are taught the principles of weaving in the kindergarten in mat plaiting, and, as they pass from grade to grade, are allowed to make rugs, curtains, blankets and sweaters for their dolls, kettle-holders, gloves and caps in primitive looms. They are not taught weaving because of the things they make, but because of the excellent training that such work is for their development.

It has been found to be an ideal occupation for small children as well as older ones, and gives admirable opportunities for the development of the head, hand and heart. Not only are both hands trained equally, but the nerves and muscles of the arms and hands are strengthened by the daily occupation. Hand and eye are taught accuracy and industry; economy and patience are the outcome of this training. The heart of the child delights in giving pleasure to others by making gifts of the things it has made with its own hands, and the child gains confidence and a consciousness of power by being able to create and feels that he is of some use in the world. Dull children have had their intelligence greatly quickened by this training, so it is not surprising to find how many schools are teaching weaving to-day.

Many use extremely primitive looms. Most of the tiny ones in our illustrations are known as the Todd looms. The full size of this loom is 1 inch by 13 inches, and allows the rug to be made 9 inches by 12 inches. Its chief advantage is that it is adjustable and can be made either square or oblong as desired. To regulate the length, the headpiece, which is movable, can be let down on the brass buttons, which are placed at intervals of one inch down each side of the loom. The holes are bored half an inch apart in the head- and foot-pieces so that the side rods can be moved forward to regulate the width. This insures straight edges since the woof threads are passed around them as the work progresses. These rods are shown at the top of the loom. They also act as supports upon which the needle may be pressed up and down, allowing it to pass more readily over and under the successive warp strings. The notches are one-sixteenth inch and the teeth one-eighth inch apart, giving opportunity for a warp one-half inch, three-eighths inch and three-sixteenths inch wide. The loom has an easel support so that the pupil need not stoop over it.

The needle serves two purposes, as it can also be used as a handle in pressing the woof threads together. It is furnished with an eye for worsted, chenille, carpet ravellings,

Nearly completed



How the weaving is done

A simple table-loom

silk and rags. To thread the needle pass the strip backwards and forwards through the slits, and back again under the strip through the first slit. This makes it secure. When finishing the work use a large tape needle, thread with woof threads to make a finish for the top and bottom of the rug. This is called a heading.

The small rugs in the illustrations have been made by little children from four to nine years of age, who take the keenest pleasure in making rugs for the doll's house, and blankets to cover their dolls.

The looms must be threaded with a number of warp strings that suit the weaving. The little rugs illustrated have been done in the following manner: The warp string is fastened securely at the top and then carried around the tooth and taken to the bottom and returned around the next tooth until the entire loom is filled with warp threads. The warp should always be one continuous string, and a few inches must be left over to fasten securely when the work is finished. The first and last strings of the warp must be passed directly over the rods, and when weaving, the woof threads must be passed entirely around the rods of the side to insure straight edges.

Weaving in a Swedish loom

Frequently the warp is of the same material as the woof, but practically anything can be used—cotton string, wool, raffia, or whatever is preferred for weaving. Germantown wool has been used in some of these little rugs both for warp and woof.

Within the last few years there has been a great impetus given to fancy pattern weaving by the advent of Swedish women into this country, who are experts in the making of exquisite woven fabrics in the loom. It is a delightful occupation and can be used for many purposes—cotton towels, bedspreads, gowns, and folk-lore friezes for the nursery—so that there is really no end to the charming pieces that can be evolved by the woman clever and deft with her fingers.

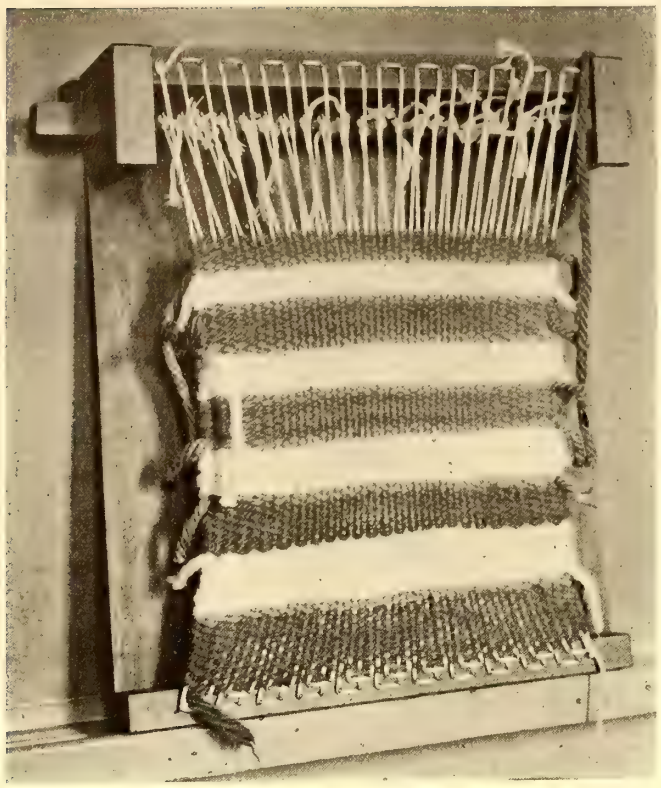
The Swedish loom is built on the same principle as the rag-carpet loom, but the treadle is not a necessity, as in the carpet-loom, for pattern weaving. The small looms show how a long needle, like a knitting-needle, is used in place of the ordinary shuttle, while the pattern itself is woven by means of a darning-needle. A separate needle is used for each color, and very beautiful patterns can be made in this primitive way.

In the small loom leaning up against the wall the warp and woof are both of blue linen, while the birds of pale blue are worked in with a darning-needle. Such weaving would be appropriate for a chair seat and would outwear any kind of upholstery. The warp threads are divided by moving the part of the loom which divides the warp threads just as the treadle does in the front loom. The loom with the seat does not show this part, as the rollers are operated by an attachment on the far side of the loom, which divides the warp threads after every throw of the shuttle. The warp threads are usually of ivory linen, and the shuttle-needle is filled with the same kind of linen. Mercerized cotton can be used if preferred. Sometimes the design is of cotton and the warp and woof of linen. It is not easy for everyone to make her own designs, but cross-stitch patterns can be utilized, as they have very much the character of Swedish weaving. In the table-loom very pretty linen towels can be woven with beautiful border designs made from cross-stitch patterns.

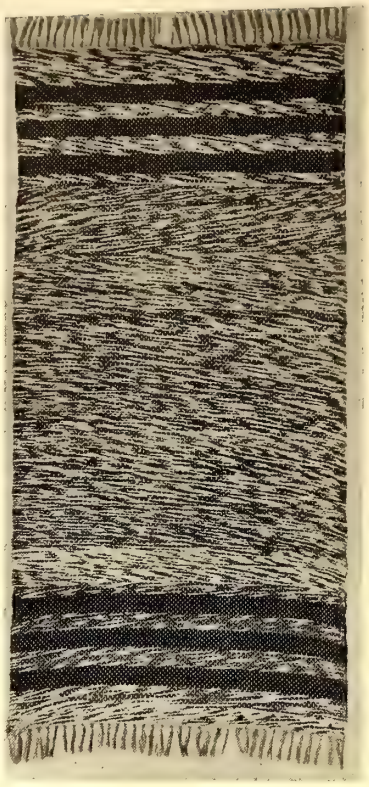
Almost all weavings have a few inches of plain weaving at each end. When this heading is made at one end, darning or pattern weaving is then introduced, the alternate threads of the warp being taken up with the needle. The threads are not cut off until the work is finished, but when a needle needs replenishing the thread must be fastened securely to one of the warp threads. As the cloth is being woven, it can be rolled by means of the spikes on the right hand of the cloth beam. It is really remarkable how many yards can be woven in a day in a small loom of this kind.

Coarse fiber, jute and string are often used for rugs. The Priscilla rug illustration is made in a rag-carpet loom. These can frequently be picked up in the country at a trifling cost, and delightful and serviceable rugs can be made in them at home. Any material, such as denim or unbleached muslin, can be woven after first being torn into strips and sewed neatly together and wound into balls. Usually the person from whom the loom is bought will supply it filled ready with warp threads of the desired color. White or tan is the most useful, as they harmonize well with any color used with them. If the loom is not already warped, it can always be sent to a professional beamer in any town, and in the country an old weaver can usually be found who understands how to put in a warp. There are supply stores in every town where warp threads may be bought, and they are usually able to give the name of a beamer. The loom being prepared and the material balled, it is then wound off the balls on to an iron rod, which is placed into a winding wheel sold with the loom. It is then ready for the shuttle, the iron bar being

A loom in which fancy pattern weaving can be done



A table-loom showing over and under basket weave



A Priscilla rug

Table-cover woven in a Swedish loom

removed before it is placed in the shuttle. One end of the material is pulled through the holes at the side and is then ready for weaving. First push the left treadle down with the left foot which will cause a gap between the two layers of warp. Then take the shuttle in the right hand and throw it to the other side of the loom between the warps, holding with the left hand that part of the loom which contains the reed. This is termed the lay. A couple of inches of material must be left at the edge of the rug to be turned back and lapped around at the side. After throwing the shot, pull the lay forward and press the right foot down, releasing the left, which will make a reverse gap between the two layers of the warp. Then take the shuttle in the left hand and throw from right to left between the warps, the lay being pulled forward between each throw. This is how the Priscilla rug is made. The variegated effect is gained by twisting the white and colored strips together and winding on a ball. Bands of plain color are used for the dark strips at either end. A heading of at least one and a half inches must be woven at each end of the rug and enough warp left to enable the weaver to make a good knotted fringe. Fancy knotting is a great improvement to the rug, some rugs having as many as three rows of knots.

When preparing the material for weaving it should not be cut into strips in the old-fashioned way. The material must be tightly wound in a roll and bound with a string. Place on a firm table and cut with a sharp carving-knife. This insures a smooth, straight edge, which some people prefer in a hand-woven rug. A great many, however, like to see a fuzz all over the rug, and this is done by tearing instead of cutting the material. Suppose, for instance, the length of the material is twenty yards. Take a measure and mark the material in inch and inch and a half divisions across the width. Cut about half an inch. Place this end of the material on a hook screwed into the woodwork, and then begin to tear from where the strips are indicated. In less than half an hour the whole twenty yards will be torn into even strips. To avoid getting them tangled it is best to wind them into balls as each strip is torn.

When the rug is made it should weigh about two and a half pounds. As a rule from five to seven yards of material of the width and weight of denim will make one yard of weaving. If the material is torn carelessly and the strips are too wide, more material is used without improving the rug. In heavy material three-quarters of an inch is a good width, but in thin material like cheese-cloth an inch and a half would not be too much, as it packs into so small a space. Unbleached muslin might be three-quarters of an inch to one inch. So much variety can be introduced in this work that one will not readily tire of it.

"Druidream"

The Residence of Charles W. L. Roche, Esq.

Brantwood, Short Hills, New Jersey

By Charles Chauncey

MR. ROCHE'S residence at Brantwood, Short Hills, N. J., is an interesting type of the modern suburban house, designed in the English style. It is constructed of stone, shingles and half-timber work.

The first story of the house is built of rock-faced graystone, while the second story is of frame construction, the exterior of which is covered with white cedar shingles stained a soft gray color. The trimmings are painted dark bottle-green. The gables forming the third story of the house are beamed, forming panels, which are filled in with stucco work. The beams are also painted dark bottle-green. The roof is shingled and stained a soft gray color.

A circular serpentine roadway winds up to the porte-cochère from which the entrance to the house is made. The unique feature of the house is the great hall with its series of columns, from which spring arches, producing a groined-ceiling effect. The woodwork is finished in dark Flemish brown. The walls have a paneled wainscoting extending around the hall at a height of six feet and on a line with the intersection of the spring of the arches. The walls above the wainscoting are treated with a brownish-yellow wall covering, blending well with the soft brown tone of the woodwork.

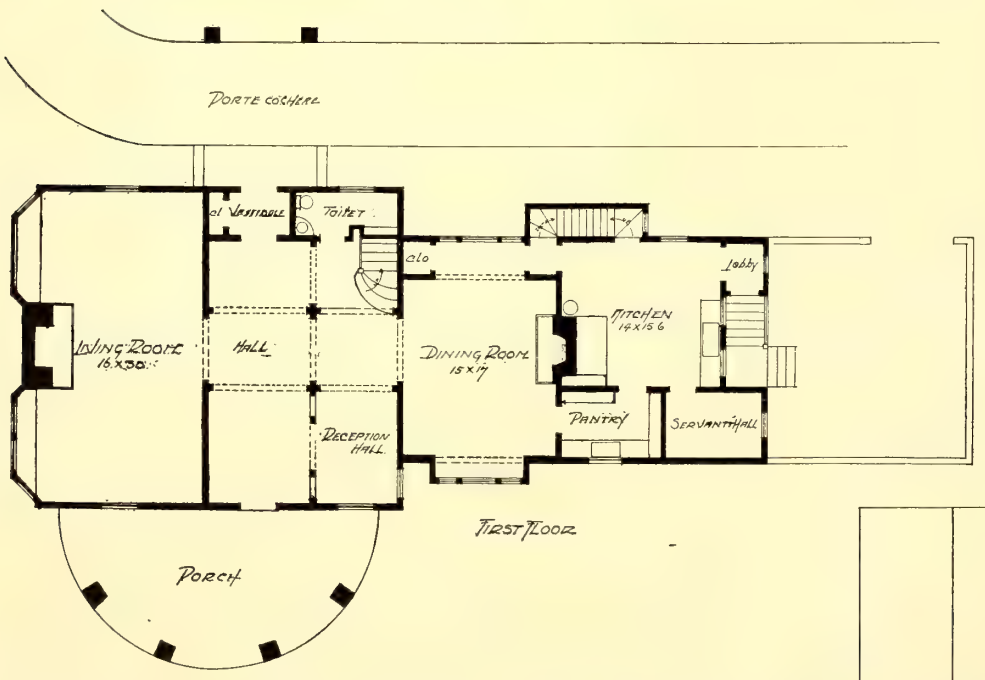
From the reception-hall a broad French window opens on to the living-porch, semicircular in form, which is furnished in a most comfortable manner, and is where the family life centers on a warm summer's day. Broad steps lead from the living-porch to the formal garden at the rear of the estate, which is formed by a series of terraces.

To the right of the entrance is the living-room, extending the entire depth of the house. It is trimmed with oak and finished in black. The walls are covered with a two-tone green-striped wall-paper. Opposite the entrance to the living-room is a broad open fireplace built of Tiffany brick with the facings and hearth laid with the same, and the whole finished with a mantel of excellent design. The ceiling is beamed, forming panels which are tinted a lighter shade of green than the side walls.

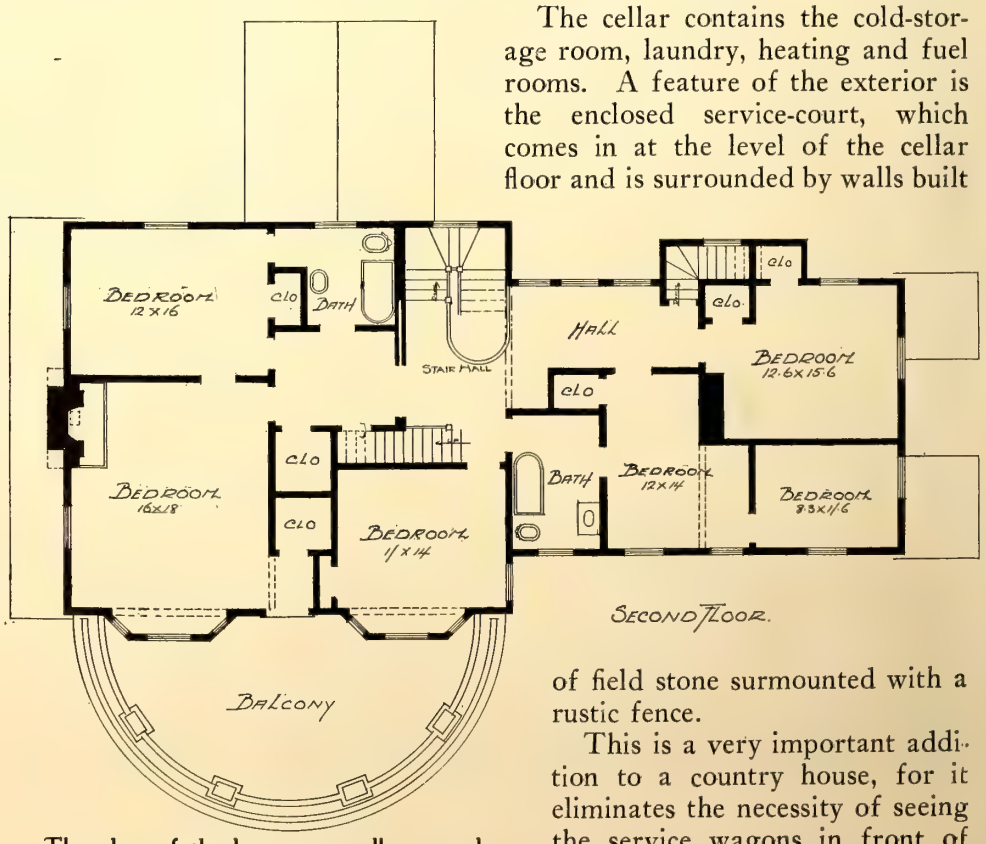
The garden front of the house, showing the terrace sloping to the pond at the highway

A porte-cochère is built at the entrance-front of the house

A well-furnished piazza facing the garden is a desirable feature of the country house



To the left of the living-hall is built the dining-room, which also occupies the entire width of the house and gives ample opportunity for good light and a cross ventilation. This room is trimmed with oak finished in a Flemish brown. The walls are paneled to the height of eight feet with battens, between which the surface is covered with embossed Japanese leather in a blue and gold design on a green background. Above the wainscoting there is a broad frieze of Japanese leather. The fireplace is built of Tiffany brick, with facings extending to the height of five feet, at which point the whole is finished with a mantelshelf painted ivory-white. The door for the dining-room opens into the butler's pantry, which is fitted with drawers, dressers and sink. Another door opens into the kitchen, which is provided with dressers, sink and every modern appointment. The kitchen is also provided with a servants' hall,



The plans of the house are well arranged for convenience

which is the new feature for the modern country house.

The second floor contains the owner's suite, consisting of a boudoir, bedroom and bath, besides numerous well-fitted closets. There are also four bedrooms and one bathroom on this floor. All the rooms are treated with ivory-white paint, with one color scheme for each of the bedrooms. The owner's sitting-room has an open fireplace. The bathrooms have white enameled tile wainscoting and floor and porcelain fixtures, with nickelplated plumbing.

The third floor contains ample storage room and servants' rooms.

The cellar contains the cold-storage room, laundry, heating and fuel rooms. A feature of the exterior is the enclosed service-court, which comes in at the level of the cellar floor and is surrounded by walls built of field stone surmounted with a rustic fence.

This is a very important addition to a country house, for it eliminates the necessity of seeing the service wagons in front of the kitchen door. It also forms

The interesting feature of the hall is its groined ceiling

The panels of the dining-room walls are filled in with leather with a brown design on a green background

a drying-yard for the clothes. The driveway, which comes in from the main highway, passes into this service court without passing the front door. This is also a good feature, for it prevents, in every possible way, the necessity of the service wagons coming closer to the living part of the house.

The site in which the house rests is a knoll, with a high way extending around three sides of it, and, on account of its prominence, and its topography, it was found feasible to build a garden, with a series of terraces extending down from the living-porch at the rear of the house. The central walk from the porch leads down to a pool, which is well stocked with gold and other fish, and flowering water lilies. The walk to the pool is edged with dwarf pines and other hardy shrubs. A privet hedge surrounds the entire estate. Much planting of perennials has been done about the grounds, and the grouping of the various shrubs is most artistic and effective. Messrs. Rossiter and Wright, of New York, were the architects of this interesting house, and they have given a very careful study of the interior arrangement of the various rooms, the relation of each, the proper placing of each room for light and ventilation, and the proper exposure for sunshine and breeze, which is an important point that should receive proper consideration in the building of a sanitary home.

The house is built of stone for the first story, shingles for the second and stucco and half-timber for the third

The Begonia

By Eben E. Rexford

FEW plants are more ornamental than some varieties of the begonia when they are well-grown. But as generally grown few plants are more unattractive. Nine out of ten, in the living-room windows, will be lanky, awkward and half leafless. What few leaves they have will lack healthy color, and give the impression that the plant on which they grow is so nearly starved to death that it is impossible for it to fully develop its foliage. Such a specimen, however, will live on indefinitely. The fact is, the begonia is a plant with more inherent vital force than most plants adapted to window culture, and it will respond readily to good treatment, and soon become a "thing of beauty" that will be "a joy" as long as it is treated well.

Begonia templinii

The man or woman who has success in growing plants is often called into consultation by those who fail to grow them well, and when the begonia is the subject of diagnosis it almost always develops that lack of proper soil and good drainage is responsible for failure. When I have been called in "to see what the matter is" with my neighbors' begonias I have generally found them in heavy, soggy, sour soil. Inquiry has elicited the fact that little, if any, provision was made for drainage when the plant was potted. Water has been given irregularly, and without any investigation as to the condition of the soil. The result, quite naturally, has been diseased roots, and the wonder is that the plant did not die long ago. Only the strong constitution of the plant pulled it through. Once in a while, however, we come upon fine, healthy specimens which it is a pleasure to look at, with scores of perfectly developed leaves, no bare stalks, and a symmetry of shape which makes the plant equally attractive from all sides. Such a plant is an ornament to any window, and its owner has a right to be proud of it.

Begonias in fine variety

It is an easy matter to grow good begonias if one goes at it in the right way. Soil is a most important item. It should be light and porous; never heavy and compact. One part garden loam, one part leaf mold or vegetable matter, obtained by scraping away the lower portions of sward, containing the roots of the grass, and one part sand, will grow this plant to perfection, provided good drainage is given, and water is supplied in proper quantities at the right time. The aim should always be to keep the soil moist, but never wet, and great care must be taken to apply water before the soil becomes dry. The begonia has many small feeding roots, and these suffer severely if the soil in which they are is not kept moist. Unless drainage is what it ought to be, water may collect in the bottom of the pot, and this causes the soil above to become sour, and a sour soil almost always brings on a diseased condition of roots. Never be satisfied with less than two inches of drainage material in the pots in which your begonias are grown. It is well to put a layer of aphagnum moss over this material before filling in the soil to prevent the latter from washing down and closing the crevices in it. Give a plant perfect drainage and there is never any danger from overwatering.

Begonias are seldom attacked by any insect. This is a strong argument in their favor. Nearly all varieties have attractive foliage. Some varieties have leaves that are really magnificent in form and color. Many kinds have flowers quite as beautiful as their foliage. There are so many really desirable varieties that the amateur is puzzled to make a selection from the long list. Perhaps I may be able to simplify this matter by mentioning a few of the kinds I consider best adapted to amateur use. Argentea guttala is of strong, upright habit, free-growing and many-branched Its leaves are olive green, spotted thickly with silvery white on the upper surface. Below, they are a dark red. Manicata aurea variegata has very large foliage of thick, waxy texture, ground color dark, glossy green, irregularly blotched with creamy white and yellow.

Rubra and ferns

Light green with dark veins

The habit of the plant is peculiar. Its gnarled stalks refuse to go up, but twine over and about the pot until it is completely hidden. To show off this variety effectively you must grow it on a small-topped stand all by itself, where it can droop to suit its own freakish fancy. It makes a superb specimen. Rubra is a well-known old sort of strong, upright growth, with plain, dark green foliage and a profusion of pendant coral-red flowers. It is almost always in bloom. Gigantia has leaves often more than a foot across on stems two or three feet in length. To display this variety well give it a place on a bracket well up the window, and never attempt to train it. Let it train itself.

One of the newer begonias is Templinii. The accompanying illustrations, from a photograph of a plant in my greenhouse, give a very good idea of the habit of the plant, but leaves the beauty of the plant to be imagined. Its foliage is large, sharply pointed and very freely produced. The ground color of the leaf is a dark, shining green. This is splashed, blotched and spotted with clear yellow in most fantastic fashion. No two leaves are ever alike. In some, yellow is the predominating color. In others, green is most in evidence, but nearly all show combinations of the two colors in about equal parts. This begonia is of strong, robust growth, and makes a splendid plant for the decoration of a large window in a few months. It is really quite as lovely as any of the Rex family, and far easier to grow well.

The illustration of Rubra in bloom gives an idea of its decorative qualities, both as to flower and foliage. Combined with ferns, as in this instance, it is one of our best plants for the decoration of window-garden or greenhouse. Its great coral clusters, showing against a background of green, never fail to challenge admiration.

The Hoagland erecta is a very strong, rampant variety, almost always in bloom. Its flowers are shaped like those of Rubra, but are of a soft pink, shading to carmine at first, but soon fading to nearly white. These flowers are covered at the base with short hairs which give them a plush-like appearance. This variety can only be grown effectively in large windows, for it requires ample elbow-room in which to display its beauties to the best advantage.

Most amateur flower-growers have an ambition to grow the Begonia rex. Its large, richly colored leaves have a greater attraction for them than most flowers have. And that a fine specimen of this class is simply magnificent in all respects no one can deny. Some varieties have leaves a foot in length and six or eight inches across. In some, the prevailing color is red, in others, purple, while many show shades of green, ranging from dark olive to palest pea, overlaid with a silvery luster quite indescribable. Some of the choicest sorts have an iridescent sheen like that of silk or satin. The Rex, unfortunately, is not very well adapted to living-room culture, though it can be grown there if given such attention as it requires.

Hoagland erecta

Begonia rex

A Successful Remodeled Barn

By Edith S. Welch

Photographs by Mary H. Northend

THIS fine old New England barn had an interior in first-class condition. It was decided to leave the walls as they were, staining them a soft, brownish gray, which gives a cool, weather-beaten appearance. The floor was thoroughly cleaned, and a plain green straw matting laid over it, which contrasts prettily with the dull tones of the woodwork.

The original barn door was retained, and to-day slides back and forth as it did when the place served its original purpose. A low flooring, some eight feet square, laid on rough stone supports, was built just outside the door, and two urns and a large terra-cotta garden pot, filled with bright blossoming plants, were arranged along the edge, and add a welcome touch of color to the pure white exterior of the building.

Three windows, placed close together, were inserted at the rear of the barn, and swing inward on hinges, and thus allow plenty of light and fresh air to enter the interior of the apartment.

A long, broad seat extends beneath the windows, and is softly cushioned in tones harmonizing with the matting upon the floor, and is piled with downy sofa pillows to make it comfortable and attractive. Two large slat-back settles, painted white, and softly cushioned, with rare tapestries thrown carelessly across them, have been placed on either side of the old barn door.

The furniture consists of many large raffia chairs, fitted with cushions similar to those found on the window-seat and settles, and numerous dainty Arts and Crafts tables, painted white, which serve as receptacles for vases and pots of flowers, magazines and bric-a-brac. There are also a few fine Colonial pieces placed about, and these lend a charm and dignity to the apartment, such as only old mahogany can. Beautiful tapestries and numerous pictures and knick-knacks adorn the walls and relieve their somber coloring.

The success obtained in this very interesting remodeling was, of course, due to the artistic care with which it was carried out. The barn readily lent itself to its new destination, being a simple, modest structure, not altogether unlike a

The cosy result of artistic transformation

The new piazza at the rear

The transformed door

house in its original state. The structural changes and modifications were, therefore, of the simplest kind, and it scarcely needed more than a very moderate rearrangement of the exterior to make the interior available for human uses. The fine taste shown in the interior arrangements and fittings is well brought out in the photographs, which exhibit an interior so completely transformed and decorated as to leave scarce a hint of the original purpose of the structure.

The charming living-room of the old barn

A shingled house with concrete columns, supporting the piazza roof, is the feature of this house

A trellis built at each corner of the house is effective

Cement stucco is the material used for the exterior walls

A rock-faced field stone, half-timber and stucco, are the materials used for the exterior walls

A brown stained shingle, a white painted trim, is the color scheme of this house

A typical example of the old New England farmhouse

The lattice-window effect is the chief characteristic of the house

A house built of rough stone laid with wide white mortar joints

A house of simple lines, with white painted shingles and green painted blinds

Great stone pillars support a leanto roof, forming a cover for the piazza

The walls of rough cast are tinted cream yellow, while the shingles are stained a moss green

A stucco house with a pergola porch has a fine setting

An ideal house of stone and shingle for summer use

The sloping roof brings the house close to the ground

An interesting porch is the feature of this house

A house designed on the style of a Swiss chalet

A shingled house with concrete columns, supporting the piazza roof, is the feature of this house

A trellis built at each corner of the house is effective

A house of simple lines, with white painted shingles and green painted blinds

Great stone pillars support a leanto roof, forming a cover for the piazza

Cement stucco is the material used for the exterior walls

A rock-faced field stone, half-timber and stucco, are the materials used for the exterior walls

The walls of rough cast are tinted cream yellow, while the shingles are stained a moss green

A stucco house with a pergola porch has a fine setting

A brown stained shingle, a white painted trim, is the color scheme of this house

A typical example of the old New England farmhouse

An ideal house of stone and shingle for summer use

The sloping roof brings the house close to the ground

The lattice-window effect is the chief characteristic of the house

A house built of rough stone laid with wide white mortar joints

An interesting porch is the feature of this house

A house designed on the style of a Swiss chalet

Photographs of Sixteen Houses of Moderate Cost

House for a Guaranteed Cost

A Reputable Building Firm has Guaranteed to Build This House under Normal Conditions for Fifty-four Hundred Dollars within Sixty Miles of New York City

UP TO the present it has been the custom to print illustrations of houses without giving the cost, or, at most, giving an approximate price. On taking this subject up with various building contractors, it was found that in no case has a house been built at anywhere near the cost given with the illustration. The trouble is due principally to one of three causes:

First, the house was built several years before, and all know that labor and materials are continually advancing, and a house built three or more years ago would cost perhaps twenty per cent. more to-day.

Secondly, many architects figure roughly at so much per square foot, others per cubic foot, forgetting that the same square or cubic area may be finished in pine with no ornamental trim, or in mahogany with carved beam ceilings and heavy wainscoting—the cubic prices would, of course, vary considerably.

Thirdly, it will be noted that nearly all of the illustrated books of houses with estimated prices originate in Western cities, and it would cost usually one hundred per cent. more to build the same house in the vicinity of the city of New York.

This state of affairs has discouraged many intending house-seekers, and we now propose to do what we have never seen before, that is, to illustrate and describe an artistic dwelling, giving a definite figure at which a reputable firm of builders have guaranteed to build this dwelling absolutely complete and with no extras whatever, except lighting fixtures, which are never included in a building contract.

It will be seen at a glance that the house has been carefully studied, both for comfort and homelike effects. At the very entrance the front door, by its unique design, gives promise of an attractive interior.

The porch is roomy, and floored with red tiles, giving a warm, substantial aspect the moment you set foot on it.

The dining-room is entered also through a casement opening, which can be tastefully hung with draperies, and around the walls is a heavy paneled wainscoting, six feet high, with a wide plate-shelf running all around. Four crossed beams in the ceiling add to the inviting appearance of the room. At the back, under two criss-cross casement windows, is a combination dresser and china closet built into the wall—a handsome ornament in itself, and completing the stamp of coziness, which is the greatest charm of a dining-room.

The butler's pantry is ample, and thoroughly equipped with cupboards. The kitchen has every modern convenience, the range is of the best make, an enameled iron sink, soapstone wash-tubs, and tile hearth; the careful alignment of the galvanized iron pipes completing the symmetry of the room "where woman's work is never done." It will be noticed that even the ice-box has been allotted a place where it can stand away from the heat of the kitchen, and the maid's comfort has been consulted to the extent of a small porch which she can enjoy all to herself.

Upstairs are four good-sized bedrooms, with plenty of closet room, and the bathroom is finished in white enamel and nickelplated pipes throughout.

The attic is entered through a scuttle, and has ample room to store all the trunks and other articles innumerable that are only wanted at long intervals.

The floors are of narrow boards of comb-grained North Carolina pine, and finished in wax, so as to fit them for rugs if desired.

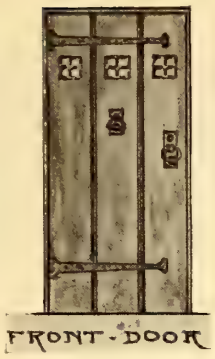
Chestnut is a wood with a beautiful grain, which can be tinted in many attractive ways and colors, and for that reason it has been selected for the entrance-hall, stairs, living-room and dining-room, the rest of the house being finished in fine cypress and stained any color the owner may choose.

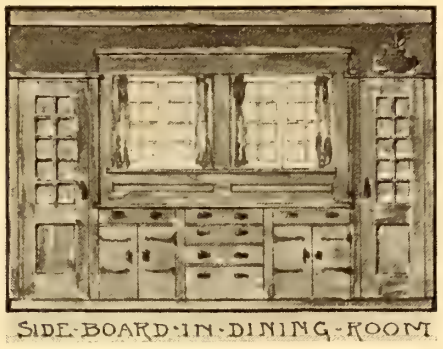
A good dry cellar is an absolute necessity, and this one is well floored with concrete to give an even, dry surface. The coal-bin is placed near the steam-heater, and the house is supplied with a steam-heating apparatus capable of heating every room to seventy degrees in zero weather.

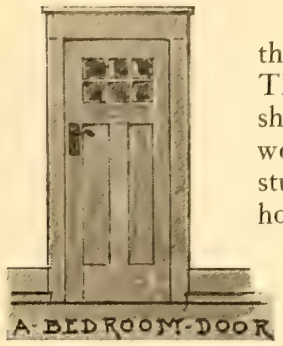
Even the doors of the rooms have been carefully worked out, and are just "different" from what is commonly found in homes. The upper panel is divided into small square openings filled with beautifully colored hammered glass, and when the room doors are closed, the effect from the hall, as you reach the second floor, is a pleasant surprise.

Now as to the outer walls of the house, and those are its most important features. Instead of wood framing, the walls are made of terra-cotta hollow tile, and the exterior covered with cement stucco. These hollow tiles are new, and yet they are old. They are new in that they have now been

The elevations: Front and side


FRONT-DOOR

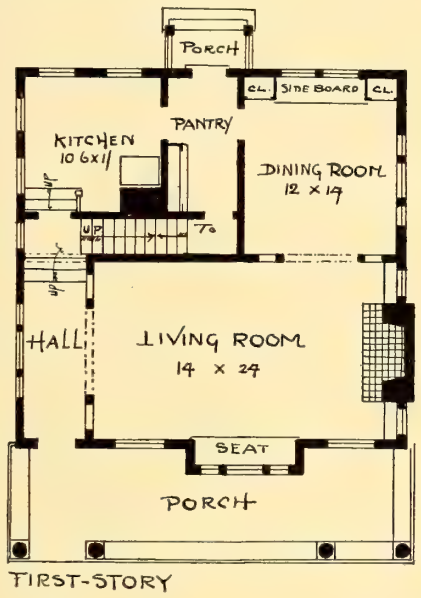

SIDE-BOARD-IN-DINING-ROOM


A-BEDROOM-DOOR

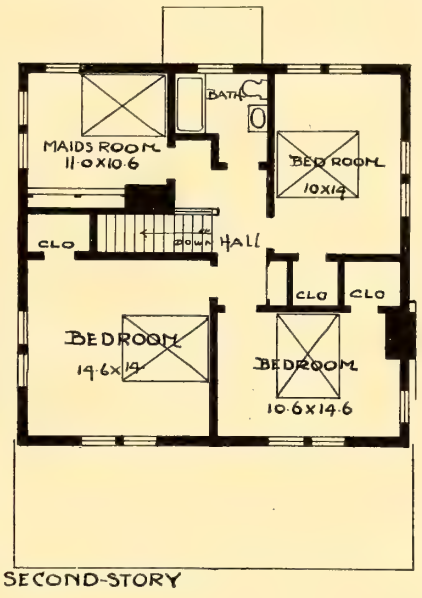
recognized by the best and most progressive architects as the modern type of construction, and they are old in that they have stood the test of several years' use. The air spaces in the hollow tile insulate the house just like the double walls of a refrigerator, and prevent any heat, cold or dampness entering such a house. The result is that in summer, no matter how hot the day, the house is delightfully cool, and in winter a slight heat in the cellar will counterbalance the coldest weather and the sharpest blast. Here again the hollow-tile construction rises superior; the strongest wind will not suffice to rock such a house in the slightest, preventing cracked plaster and damaged papered walls.

It may not be commonly known that a frame house will shrink about eight inches the first year after it is finished, opening up unsightly cracks in plaster and woodwork. The hollow-tile house shrinks not at all; it is as solid as a rock.

The material itself costs more than wood framing, but the difference in price is made up in a saving in labor.



FIRST-STORY



SECOND-STORY

In framing a house there are six operations: The exterior boards, or shingles, sheathing paper, wood sheathing, wood stud, lath and plaster. In hollow-tile construction, only three, viz., the stucco exterior, the hollow tile and interior plaster; and labor is a large item to save. As to strength, each one of these tiles can support over one hundred thousand pounds pressure, more than enough to support a six-story building. The roof shingles can be stained any color desired, and the stucco exterior can be finished smooth, semi rough or very rough, and from the white of Carrara marble to the beautiful varitoned gray of natural cement.

We have the written guarantee of a reputable building firm that they will erect this house as described, anywhere within sixty miles of the city of New York, at five thousand four hundred dollars, this guarantee to hold good until August 1, 1909.

Here, then, is a wholly new feature in architectural journalism, which should prove of the utmost practical value to the readers of American Homes and Gardens. The guarantee that is offered with this design is complete.

The walls of the house are built of terra-cotta tile covered with a cement stucco

The Warner house, the first brick building erected in Portsmouth, New Hampshire

A Colonial House at Portsmouth, New Hampshire

By Mary H. Northend

Photographs by the Author

ALMOST two centuries ago there was built in Portsmouth, N. H., at what is now the corner of Daniel and Chapel Streets, a stately Colonial mansion, the first brick building to appear in that old seaport town. This house, completed about 1718, was the residence of Capt. Archibald Macpheadris, a wealthy merchant who had come to this country from Scotland. He was at that time the chief promoter of the Dover Iron Works, which were the first to be established in America, and chose Portsmouth, some twelve miles distant, as his home. Here he married Sarah Wentworth, and settled down in his newly built house. At his death the estate fell to his daughter, Mary, who had married Hon. Jonathan Warner, a member of the King's Council until the outbreak of the Revolution. For some unknown reason the name of Macpheadris' son-in-law, rather than that of the original owner, became associated with the mansion, and to-day the well-preserved old structure is pointed out to interested visitors as the Warner House.

The simply ornamented doorways are suggestive of good old Colonial hospitality

The fact that this home of the old Scotch trader has withstood the ravages of New England weather for nearly two hundred years, and that it is still in good condition, certainly speaks well for the workmanship and original material put into it. Eighteen-inch walls, built of honest Dutch bricks imported from Holland, together with many other things used in the construction of the house, rise from a firm foundation, also of brick. Gambrel roof, luthern windows and a quaint little cupola mark this three-storied house as a genuine old-timer, and the broad, simply ornamented doorways are suggestive of good old Colonial hospitality.

The main entrance leads directly into a spacious hall extending the entire depth of the house. Here a few beautiful pieces of old mahogany furniture show up to the best advantage against the white paneling of the walls. The flight of broad, low stairs brings to one's mind a vision of the fair, stately dames and dignified gentlemen who trod them in early days, and the heavy iron bar which is still fastened securely to the stout door bespeaks a time when such protection was necessary. The red men, however, were apparently not the dreaded foes, for the enormous antlers which decorate the wall are evidence of their friendliness toward Captain Macpheadris, if an old tradition is to be believed. Two portraits of Indian chiefs hanging at the head of the stairs also seem rather to corroborate this story than otherwise.

But the distinctive and really remarkable feature of this hall is the wall fresco reaching from the foot of the stairs to the second-story landing. On the rough plaster are depicted various scenes, all evidently the work of a master hand. At the head of the stairs is Governor Phipps seated on his charger; lower down, Abraham is pictured just as he was about to sacrifice his son, Isaac; still another subject is a lady at a spinning-wheel, while landscapes in rich coloring occupy bits of the wall here and there. These wonderful frescoes were hidden for many years under wall-paper, and it was not until fifty or sixty years ago that they were discovered, quite by chance, when a fresh covering was to be put on the walls. In one place, where the four or five layers of paper which had accumulated was peeled entirely off, a little girl of the family saw a horse's hoof. A careful removal of the paper revealed the remarkable pictures, covering an area of from four to five hundred square feet. As a proof of the fact that the frescoes must have been covered up for many years, the story is told of an old lady, eighty years old, who had been a constant visitor at the Warner House in her youth. She could scarcely believe her eyes when she saw the paintings, and declared that their existence was unknown when she was intimate with the family.

At the farther end of the broad hall is a door opening, not upon an old-fashioned flower-garden or orchard, as might be expected, but on to a small, grassy yard shaded by tall trees. This may possibly have been the original location

of the old slave quarters, long since removed, but the exact site of that building is not now known. An interesting feature of the exterior of the old mansion is a lightning-rod claimed to have been put up under the personal supervision of Benjamin Franklin, and said to be the first one erected in the State of New Hampshire.

Turning to the right, one passes from the hall into the great drawing-room, with its high white-paneled walls. At one side of the room is a broad arched doorway, where a large pipe-organ formerly stood, while a corner of the room is occupied by a fireplace faced with splendid old Dutch tiles. Quaint bits of pottery and metal of early make, together with beautiful old chairs and tables, some of them rare Chippendale and Sheraton pieces, have been used in the furnishing of this room. On the walls hang several fine portraits, painted by the famous Copley, all of which were originally encased in Paul Revere frames. A fire which swept through the town many years ago necessitated the removal of the pictures, however, and before their return the frames, with the exception of one, had mysteriously disappeared. So it happens that Mrs. Jonathan Warner is the only one who smiles at the chance visitor from a heavy gilt frame. Included in this family collection are the portraits of Captain Macpheadris, his stately wife, and of the dignified Jonathan Warner. Miss Mary Warner, too, is pictured as an old-time belle, robed in stiff brocade and rich lace, and brings to one's mind the days of long ago when the spacious drawing-room was converted into a banquet-hall and later became the scene of a stately old-fashioned dance. One seems almost to hear the rustle of silks and the soft click of high-heeled slippers, while fair ladies in wonderful gowns, and dignified gentlemen in ruffled shirts, embroidered coats and small-clothes, long silk stockings and silver-buckled slippers flit by in imagination, as they would have done in reality, had one visited in the days when the Hon. Jonathan Warner entertained with lavish hospitality.

Jonathan Warner's military suit

But not in the drawing-room only does one find the atmosphere of bygone days. In the living-room, directly across the entrance-hall, there are a multitude of things to attract the visitor's attention. This room, like most of the other apartments in the house, is paneled in white, and its walls offer a most effective background for the queer, old-fashioned pictures and long, heavily framed mirrors which hang upon them. Priceless old mahogany abounds, and among the most notable pieces of furniture is a magnificent secretary. The shelves behind its glass doors were originally filled with an excellent collection of old books, but owing to the loss of part of them one compartment was left empty, and has since been taken for Indian relics. Another most fascinating bit of furniture is a diminutive desk, said to be an exact copy in every detail of the original, which was brought to America by John Alden.

Like the drawing-room, the living-room boasts of a fireplace, framed in quaint, imported tiles, but in place of grate or andirons, there is a Franklin stove, surmounted by a queer coffee-urn, once the property of Governor Langdon. From a historical point of view, however, this stove is far less interesting than one which is still in use in an upper chamber of the Warner mansion. That stove, although not nearly so pretentious in appearance as the one in the living-room, has the distinction of being one of the three in Portsmouth which were set up by the famous Franklin himself. Needless to say, to the tourist's mind such fame more than atones for any deficiency in ornamentation he may have observed.

Old-time furnishings are used in the chambers, as the beautiful carved four-poster shown in the illustration will testify. With its snowy canopy, ruffled counterpane and exquisite hand-knot spread, this old bed is surely far more suggestive of rest and pleasant dreams than some of the gaudy, elaborate affairs displayed in the shops to-day. Odd candlesticks, vases, and such curiosities as foot-stoves and powder-horns, add to the picturesqueness of the rooms, and at the same time enhance the flavor of romance which clings to every nook and cranny of the historic old mansion.

The great secretary in the living-room

The present owner of this delightful house, with its wealth of valuable antiques, is Mrs. Penahallow, a direct descendant of Hon. Jonathan Warner, whose name the structure still bears. Proud of her remarkable possessions, this fortunate woman takes the greatest pleasure in caring for her treasures and in showing the house to occasional visitors. Nothing of interest is passed over from the row of old-time fire-

buckets hanging in the rear hall, to the embroidered military suit worn by Jonathan Warner, and now carefully folded away with his sword and cocked hat. Even the bills of lading for much of the family plate and imported furniture have been preserved since the year 1716 and may be seen. With such a store of interesting things to be examined it is small wonder that the old Warner House proves a most attractive spot to the tourists who is visiting the landmarks of Portsmouth.

There is a world of interest in this fine old house, which sums up, in quite a remarkable way, some of the most striking characteristics of all that is best in New England Colonial architecture. Of genuine Colonial architecture; that is, for this sacred word is nowadays applied to modern structures as well as old ones, and it may be that not a few persons may misunderstand its true meaning, and confuse the real with the imitation, mistake the new for the old. The real student of buildings needs no guide to help him out on this point, for the genuine Colonial house has its well-defined hallmarks, and the modern imitation can never be mistaken for the genuine antique.

The main entrance leads directly into a spacious hall

In Portsmouth, and in most New England towns, there is little need to note this difference or to call attention to this basic distinction, if distinction it be. And for the Warner House no guide-book to genuine old building is needed, for its antiquity cries aloud and speaks distinctly in every part. Not, indeed, because of manifest discrepitude, for the house is now as hale and hearty as ever it was; but because of the quiet, penetrating beauty of its exterior, its distinguished air, its old-time flavor, the untranslatable quality of distinction that belongs to structures of this period, as a matter of right; a quality that is their birthright; in fact, and which no modern building ever has or can hope to acquire save by the patient process of long-continued growth and silent duration through a long

The living-room is paneled in wood, painted white

Bedroom with original four-poster

period of years. Unfortunately, many modern dwellings, were they to exist for hundreds of years, would never acquire this precious quality, but of that we are not now concerned with.

The fine simplicity of many old Colonial designs is beautifully illustrated in the exterior of the Warner House. Its simplicity, indeed, verges upon the forbidding, since there is naught here but walls of brick, windows of the most severe design, a bare string course, a simple cornice. But there is a fine old doorway, carefully enriched with delicate moldings; and there is an effective gambrel roof, which, with its dormer windows, its crowning balustrade and cupola, give character and finish to all that has been built below.

One may be sure the designer of this house knew his business, and set about it directly. He had no need to search through books, look up "periods," and debate with his client as to styles, forms, modes, and ideas. He knew what to do and did it, did it directly and simply, did it strongly and well, did it delightfully, moreover, and created a house that, after a lapse of nearly two hundred years, is still a model of its kind, and the delight of all who see it. This was doing something in very truth, and was a feat that not a few modern architects, enriched with an extensive paraphernalia of professional training have yet to accomplish.

And if this be true of the exterior of the house, it is equally so of the interior. It is true it is not now all as it has always been; but much of the original form remains, and much of the original contents. And the house, although still used and occupied to-day, is, of its kind, a veritable museum of the early domestic life of New England, filled with many interesting treasures and dowered with a rich and interesting history.

The Summer Home of Arthur W. Hall, Esq. At Crystal Brook Long Island

By Bessie P. Lee

White painted settles are built at either side of the entrance doorway

Photographs by John Clifford

THE cottage under consideration grew up out of the ground, "without a thought of the morrow," as naturally as a clump of field grass. The construction is of plank. This gets rid of the studding, and, as there is no lath and plaster used, this is quite a consideration. Only on the partitions upstairs does the studding appear, and there it is most convenient, being used as shelves or a sort of glorious catch-all.

The outside of the cottage is battened over the joint of the big boards, and stained green with Cabot creosote, while the upper half is shingled, and that and the roof left to weather the beautiful gray of the seaside shingle.

We enter through a small hall, off which is a large and convenient coat closet. And then we come at once upon the "Cantie Hearth, where cronies meet," which, with the twenty-foot window-seat just opposite, are the features of the living-room. We made up our minds that after all the bric-a-brac and "things to dust" of town, that our country home should be deliciously bare and chastely empty. And we succeeded, there being nothing much in the room besides the fireplace and the window-seat, except some good plain rocker-chairs, stained a fine, dirty worn-out blue to match the wainscot in the room. These, with a table which can easily be moved out on the porch, where all the meals are served, a few other tables and quantities of pots, jars and vases for the heaps of flowers which grow all on the landscape, make the room a perfectly easy place to take care of.

The house is built of battens for the first story and shingles for upper floor

The treatment of room and general scheme of color is unusual. The wainscot is stained blue over the knots and irregularities of the hemlock boards, while the windows and door-trims and wainscot molding is stained a crisp Veronese green. There is a frieze of orange trees, with distant glimpses of marsh and water, while the low-beamed ceiling is of dull orange crossed by green beams. The big solid ten-inch girder crossing these, and forming the backbone of the house, is upheld by two crouching grotesque figures in compo and painted in semi-conventional color. The beams are stenciled in blue in a design suggested by an old German calendar, while the floor is covered with a Chinese rug with a yellow field, upon which is an imperial dragon in blue, sprawling magnificently.

The whole effect of the room is very simple but complete, and though the color is high, it is made soft by all being done in stains over natural wood, the frieze being worked on coarse canvas in washes, in the stitchery effect often called tapestry. We regard it as immensely effective and successful.

Convenient bookcases are built into spaces wherever feasible, and on top of one (instead of their inevitable place on the mantel) is a clock of curious design. It is in the shape of a box, higher than wide, with a good molding top and bottom. A large sea monster is grotesquely writhing round and round, till suddenly you come to his widespread jaws, which seem to open just in time for you to see a clock (of the plain alarm variety) before he swallows it. This, fortunately, he never does, so you need never fear missing a train!

One of the interesting features of the cottage, we think, are the window-curtains. These are stenciled on batiste of a warm, unbleached color, in oil, and are hung at the many windows under a vallance. The curtains reach just to the sill, and the vallance is hung from under a cornice of plain wood about four inches wide, along which is stenciled, also in oil, a conventionalized berry-and-leaf design, like border of curtains. The effect of the cornice is very charming in its simplicity, because it hides hooks or rings, and the usually unpleasant things that happen at the top of curtains.

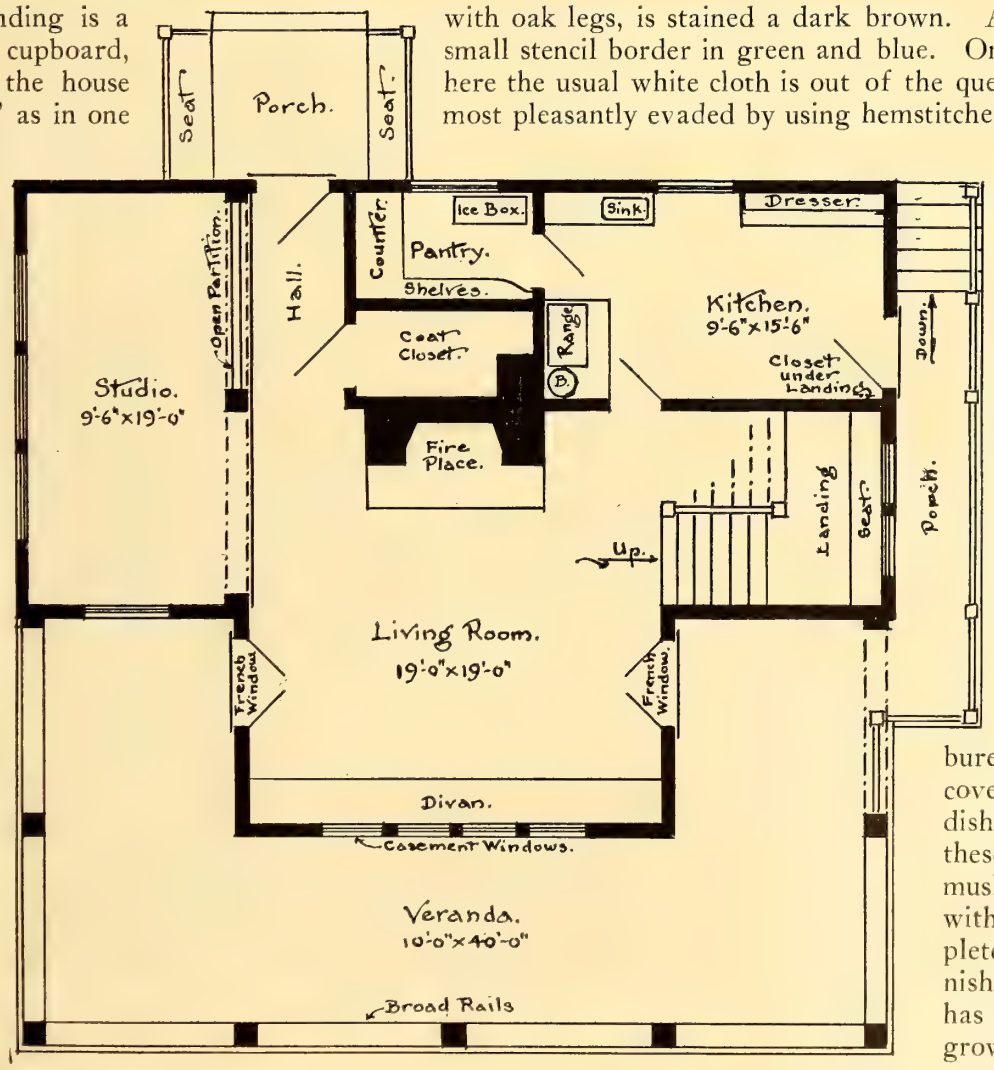
The wainscot is stained blue over the knots and over the hemlock boards, while the window- and door-trim are stained a crisp Veronese green

Two long French windows, which open on to the broad veranda, proved to look too high, so the top panels were painted to look like stained glass. This was done by drawing the design on the glass with thick blackish-brown paint with plenty of Japan dryer in it. After this was dry, the color was flowed on very thinly over the parts designed to be colored. These particular ones represent the arms of the cottage. A pointed shield, the crest of the Bush on top, and the charges on the shields were what the Indians charged for the property when it passed into the hands of the first white settlers: i. e., "4 Shirts, 4 pairs stockings, 11 bars of lead and 3 Pickel Kettle." These, with a few other useful commodities, made up the sale. A very reasonable price when we compare it with some of the present values of Long Island real estate.

The color scheme of the living-room is most effective. The decorations for the room and the furnishings were designed by the owner

Under the stair landing is a most convenient little cupboard, which the master of the house calls his "Boozorium," as in one small corner of it he keeps a few joyful bottles. The most of it, however, is devoted to a series of shelves upon which are placed a number of cunning individual cooking-pots with covers, of a beautiful lettuce green; these, with pottery plates, teapots, etc., all of lettuce green, were green made by the children in Holland and specially imported for Madame by a kind and artistic friend. The drawers below are for silver, and under these are wide and deep shelves for the table linen, which, being out of the ordinary, deserves a word in passing. The table, being a kitchen table of deal, with oak legs, is stained a dark brown. Around the edge is a small stencil border in green and blue. One can see at once that here the usual white cloth is out of the question, so this has been most pleasantly evaded by using hemstitched doilies of coarse Russian linen, upon which have been stenciled a design covering the entire doily. One set is of orange-colored conventionalized pomegranates with all the hems stained yellow.

A few of the curtains in the upstairs rooms are, perhaps, worthy of note. One sort, painted on unbleached muslin, has a border of green and blue peacock eyes, with spots at intervals on the center field. A bureau runner and table-cover on Russian linen dishtoweling are used with these, while a bedcover of muslin, edged and spotted with peacock eyes, complete this part of the furnishing. Another room has curtains of hollyhocks, growing in a garden.



First Floor Plan.

Wall Gardens

By S. Leonard Bastin

IT IS in the halcyon days of early summer that the wall garden is to be seen at its best. The shallow rooting places of the plants are yet moist with the rains of the springtime, and the wallflowers can easily hold their own even with the plants in the border. The scorching month of July, however, is hardly at an end ere the glories of the wall garden are things of the past. With the coming of the warm showers of early fall the flagging plants are, in a measure, revived, but they are scarcely able to make a fresh start before the advent of the chilly winds and sunless days of winter.

For the ideal wall garden an old wall is by far the best, one on which the passage of many years has softened the building material. The upper surface in its crumbling has provided a foothold for those pioneers of the garden—the mosses. Nature never delays long in scattering these lowly forms of vegetable life wherever their existence is possible, and long before larger plants could obtain a footing the mortar of the wall will be outlined in green velvet. So, as the years go on, generations of these mosses live and die, and each in dying will leave behind something which will add to the ever-increasing deposits of mold.

As soon as the amount of mold is sufficient to sustain any higher state of vegetable life, the plants will come. How or whence it is not always easy to say. Sometimes, but not so often as one would expect, flying seeds alight on the wall and develop into mature plants. But in the majority of instances we must look for some distributing agent, and we need not seek very far. Millions of all kinds of seeds are carried about on the feet of birds, and this is especially so in damp weather when everything is moist and sticky.

But it is one only among many who is fortunate enough to be the possessor of one of these fine old walls on which Nature has established the beginnings of a wall garden. Most of us must needs rely on our own skill to construct a situation for this most fascinating form of horticulture. This is not so difficult as it might appear to be at first sight. Some of the finest of wall gardens have only been in existence for three or four years, and so skilfully have they been built and tended that they might well have half a century's growth behind them judging by appearances. Of course, in such cases it is necessary to erect a special wall, and this business must be set about with great care. The best plan is to make a double wall of somewhat rough stones. The use of mortar is not essential, although a little here and there will make a more satisfactory job. In any case, it will do no harm if the stones do not fit very well together, as in a general way the more crevices and holes there are the better. The actual height of the wall is a matter which must be settled by the taste of the individual, although it may be suggested that about breast high is a very suitable measurement.

When it is completed the wall should be gone over and the cracks and holes slightly enlarged in order to make decent-sized receptacles for the mold which should be prepared without delay. The nature of the composition is rather an important point, and a mixture which may be well recommended is that formed of leaf mold, well-matured loam, with the addition of some gritty material to prevent clogging. This worked up into an even moist condition may be packed into the holes, not too loosely. It is not at all a bad thing to leave the wall just as it is for some months to allow everything to settle down well, and to this end it may be recommended that the best time of all to undertake the construction of a wall is perhaps in the fall of the year when there is plenty of moisture.

It must be admitted that in a general sense it is not a very satisfactory way of establishing a wall garden to plant the specimens. As a matter of fact it seems especially difficult to induce plants to get a hold in the rather curious situations which will have to be accorded to them. In most cases one can not do better than seed sowing when the plants from their babyhood seem to get some idea of the conditions under which they will have to exist. The most suitable species for wall culture are those which can stand a good deal of drought, but, although one must be rather particular in making the selection, there are a great many plants which are available for the purpose. A few which the writer knows to be good may be mentioned, though the list is by no means exhausted with these. Many varieties of pinks (Dianthus) seem to be perfectly at home, and the same may be said for the smaller campanulas, antirrhinums, arabises and aubretias. Among the larger growing varieties might be mentioned the stocks (Mathiola), the true wallflowers (Cheitanthus) and the pretty evening blooming oenotheras. It is a simple business to scatter a few seeds of any of the above-named plants in the mold-filled crevices

The beginning of a wall garden

on the wall. A period of mild showery weather must be selected for the purpose, but, should the time by any chance prove dry afterward, the seed lings will be all the better for a little watering. But nothing in the way of coddling is permissible, as the sooner the plants can realize that they are in rather a strange situation the more likely will they be to make the modifications necessary for their well-being.

To make a groundwork of green there are, of course, any number of small creeping plants which will be found invaluable. Many of the succulents, such as the Sedums, are extremely useful, and with these it is best to place small portions of the plants into the desired situations, giving them a little water to prevent flagging. The useful little stonecrop (S. micranthus) are also very easily established, and will make a gay show in the spring with their clusters of golden or white blooms. There are a whole host of creeping plants which may well be placed in suitable positions. Any gardening book will offer sugestions as to trailing species, almost all varieties of this kind being well at home on the wall.

An attractive type of garden located on the top of a brick wall

In mild localities there is no more splendid group of wall plants than the Mesembryanthemums. Cuttings of these magnificent succulents easily take root and grow with a great luxuriance. The sunniest position possible should be accorded to the plants, as, although they will grow in the shade, a warm, bright place is the only one in which they will produce their lovely flowers. The family is a large one, and there are many species which in the color of their blossoms embrace a great variety of tints.

In the foregoing, the possibilities of a wall garden in a more or less sunny position have been considered. Charming wall gardens, on which are planted various kinds of shade-loving species, may be devised where the situation is such that not much sun is experienced. Of course, the ferns are to the forefront among the varieties which are suitable for this purpose. All the ferns which grow naturally in rock crevices will flourish here, and many of the other kinds may be naturalized.

Flowering shrubs growing on the top of an old wall

A fine natural wall garden

Fig. 1—One of the streets at Forest Hills, Long Island

A Group of Inexpensive Houses at Forest Hills, Long Island

By Paul Thurston

TO BUILD artistic houses for a small amount is one of the questions which rises in the minds of all home builders of modest means. The group of small houses illustrated herewith, while constructed of a similar kind of material, shows in each design a distinct individuality. The house of Mr. Babington (Figs. 2, 3 and 4) is built of brick and half-timber work. The foundation is built of rock-faced red sandstone laid in red mortar. The first story is built of red brick, laid in white mortar, with wide joints. The second story is beamed, forming panels, which are filled in with stucco-work, stained a soft gray color, while the trimmings throughout are tinted a soft brown. The roof is covered with red slate.

The interior throughout is trimmed with cypress, finished a Flemish brown. The entrance to the house is reached from the piazza built at one corner of the house. The hall, occupying a very small space, contains an ornamental staircase, with turned balusters and newels, which are finished the same as the trim. Opening from the hall to the left is a living-room, furnished with an open fireplace, with tiled facings and hearth and a neat wooden mantel. The dining-room and kitchen, communicating through the butler's pantry, occupy the rear side of the house. Each is fitted with all the best appointments of the small modern country house. The walls of the hall are covered with a two-tone green-striped wall-paper, while the living-room has a mustard-yellow wall-paper. The dining-room has a wall covering in green and blue, with tapestry effect. The second floor contains four bedrooms and a bathroom.

Fig. 2—Mr. Babington's house is built of brick and half-timber work

Fig. 3—Another view of Mr. Babington's house showing the one chimney

Each bedroom is reached from the hall. The entire floor is trimmed with cypress and finished in a Flemish brown. The bathroom has porcelain fixtures and exposed nickelplated plumbing. The cellar contains the heating apparatus, fuel room and laundry. Cost, four thousand three hundred dollars. William Adams, of New York, was the architect.

Mr. Holmes's house (Figs. 5 and 6) is finished in a similar manner as the one already described. The plan of the house is somewhat better than Mr. Babington's, for the reason that direct communication is made from the hall to the kitchen, which is not the case in the plan of Mr. Babington's house. The second-floor plan of Mr. Holmes's house shows a very compact arrangement of rooms in a very small space. Cost, four thousand four hundred dollars. William Adams, of New York, was also the architect of this house.

Mr. Frederick Bett's house (Figs. 7, 8 and 11) is a combination of brick, stucco and half-timber work, and is built from plans by Benj. Driesler, of Brooklyn, N. Y. This house

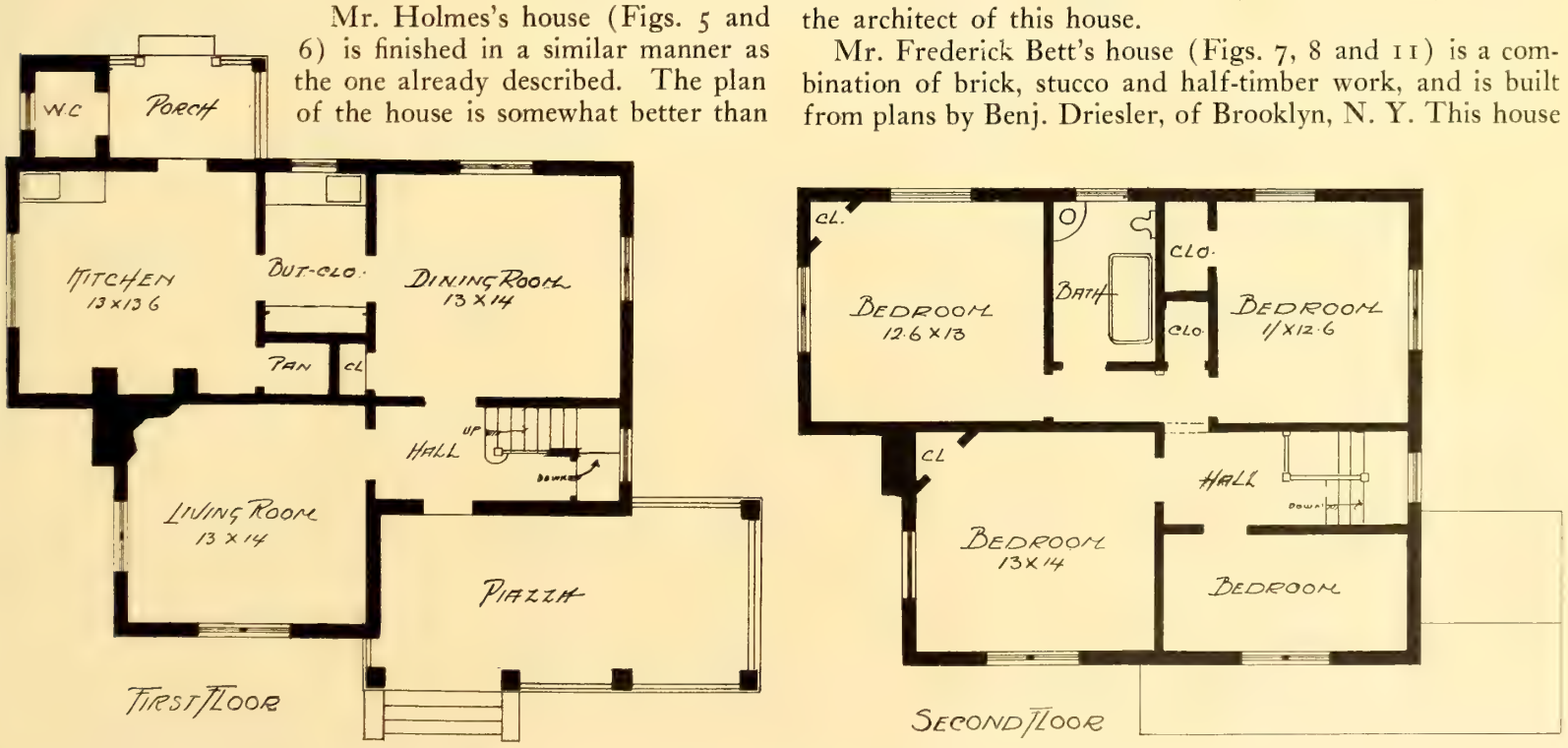


Fig. 4—The plans of Mr. Babington's house show an economical arrangement of rooms

Fig. 5—Mr. Holmes' house is a combination of red brick and stucco

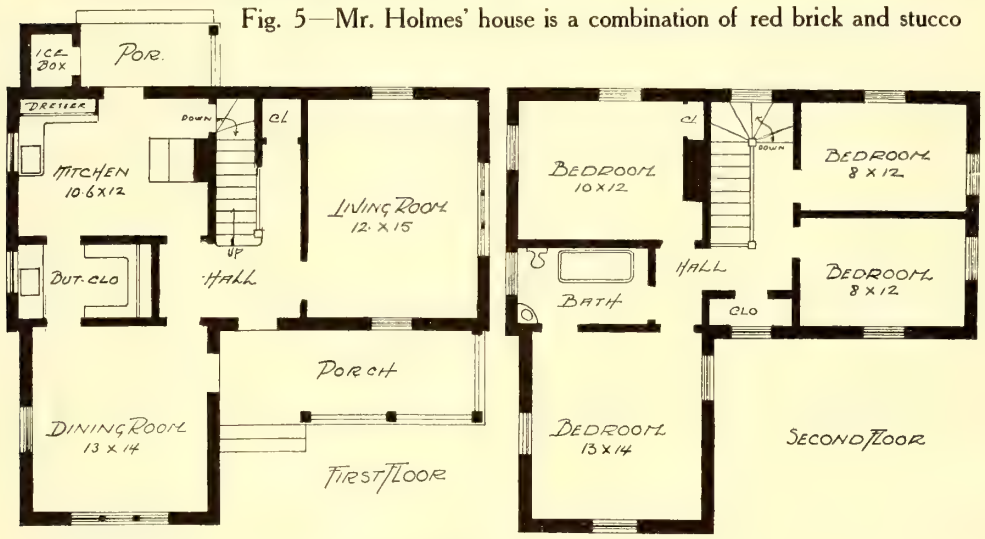


Fig. 6—The floor plans of Mr. Holmes' House

Fig. 7—Mr. Frederick Betts' house is built of red brick, stucco and half-timber

is planned to be built on a narrow lot, therefore the rooms are placed one following the other from the front to the rear of the house. The living-room and dining-room are separated by sliding doors, opposite which, in the dining-room, there is built an open fireplace, furnished with tiled facings and a hearth and a mantel of excellent design. Placing the fireplace in the dining-room, which adjoins the kitchen, precludes the necessity of an extra chimney, thereby saving a considerable expense. The hall contains an ornamental staircase with turned newels, balusters and rails. At the end of the hall is the butler's pantry, which is fitted with drawers, dressers and cupboards. It has a door opening into the dining-room and also into the kitchen. The second floor contains three bedrooms and a bathroom, while the third floor contains two bedrooms. Cost, four thousand two hundred dollars.

Mr. Meyer's house (Fig. 12) was built after the floor plans used for Mr. Bett's house, with a slight change in the exterior and different treatment of the half-timber work. Both houses have natural cypress trim throughout, finished in a Flemish brown. The walls throughout both houses are covered with artistic wall-paper.

Mr. Driesler made a distinct departure from the other houses illustrated in this series when he designed Mr. Austin's house (Fig. 9). While the underpinning is of brownstone, and the first story is of red brick, the second and third stories of the house are of frame, covered on the exterior with white cedar shingles, laid with double

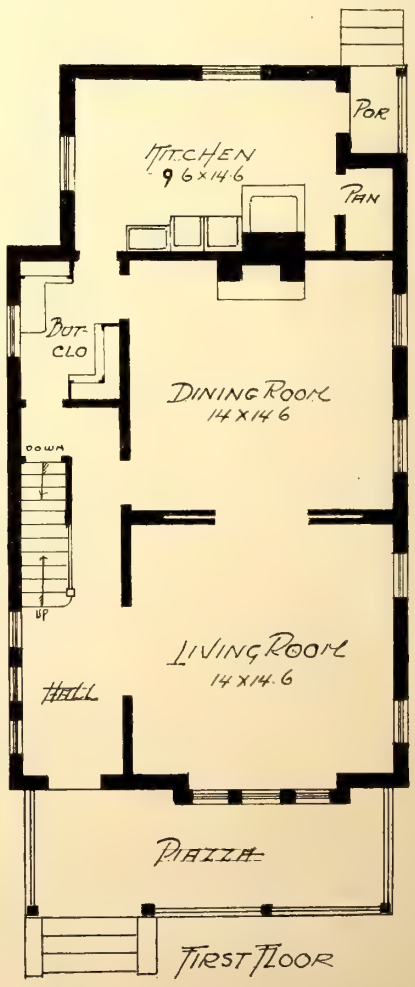


Fig. 8—The first floor plan of Mr. Betts' house

courses. These shingles are stained a soft gray color, while the trimmings throughout are painted white for the first story and gray for the second and third. The blinds are painted bottle-green. The interior is treated the same as the houses already described. Cost, four thousand nine hundred dollars complete.

All the houses are supplied with gas and electric-lighting apparatus, and fixtures in keeping with the style of the buildings. The grounds around each of these little houses are well laid out. Concrete walks extend in from the highway to the front door and to the rear door.

These houses, in design and construction, comprise an excellent group, the cost of which is not much over four thousand dollars.

To build a large house is one thing, but to build a small one, is another, especially when it is to be considered that the wants of the modern family of to-day are quite equal to the man who builds a much greater house.

To build a small house, with an exterior elevation that is artistic and distinctive, and have an arrangement of rooms that are of good size and convenient in their relation to each other, and to have included in it all the best modern conveniences and improvements for light and heat, and all the sanitary features which are necessary, for the sum of four thousand dollars, is a feat that requires much thought and study on the part of the architect, yet this is what the architect has done.

Fig. 9—Mr. Austin's house has its second story shingled and laid in double courses

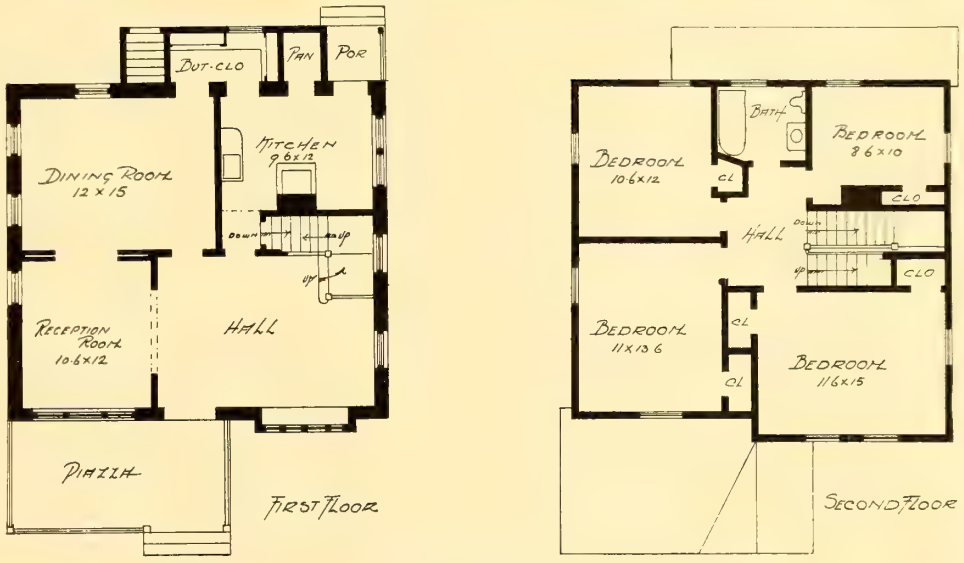


Fig. 10—Plans

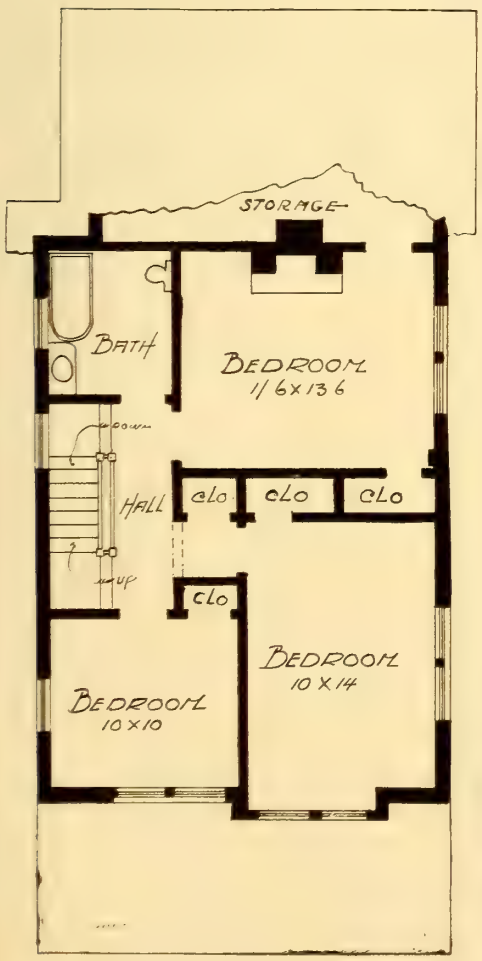


Fig. 11—The second-floor plan of Mr. Frederick Bett's house

Fig. 12—Mr. Meyer's house is built after the floor plans used for Mr. Bett's house

"Homewood,"

The Country Seat of Richard G. Tower, Esq., at Lexington, Massachusetts

By Francis Durando Nichols

MR. TOWER'S residence at Lexington, Mass., is a good example of the modern Colonial mansion. The rambling brick dwelling had its prototype in the old Colonial mansions of the South, such as Westover, Martin's Brandon and White Hall.

There is the central building with its detached extension, connected by a butler's pantry, on the first floor and a passageway on the second floor; the plan has provided for a duplicate wing to be added to the other side of the building. The great portico of the facade is, of course, derived from the house of the ideal Virginia planter.

The walls are built of red brick, laid in Flemish bond, with white mortar. The roof is covered with shingles left to weather finish. The approach to the house is from the roadway, leading in from the street and sweeping up to the portico at the front of the house. The portico is particularly dignified and the entrance-doorway, recessed into a semicircular vestibule with a domed ceiling, is an attractive feature. The portico has stone steps, while the floor is laid of brick in herringbone pattern. The rear of the house, facing the garden and the woodland, has a portico with a terrace extending from it in either direction.

The interior is generous in its proportions, and the high ceilings and spacious rooms make a delightful house for entertaining. The hall has a paneled wall from the floor to the ceiling, which is white enameled. The staircase is recessed and has a neatly turned balustrade in white enamel, and a mahogany rail. The walls of this part of the hall, and extending to the second story, have a wallpaper with a large blue design on a white background. The highly polished floor is covered with a rug with a blue body and a yellow and old-rose figured border. The stair-carpet is of a plain color in an old-blue tone. An inlaid card-table and Chippendale chairs complete the furnishing.

The portico is the feature of the front

To the right of the entrance is the reception-room, finished with a white-enameled trim, and a wall paneled and covered with watered silk and finished with a gilded border. The fireplace has gray marble facings, and a carved mantel, with a paneled overmantel and mirror. The floor is covered with a Persian rug in white with an old-rose and blue center. Soft lace curtains hang at the windows. Opposite the reception-room and across the hall is the den, which is finished with a black-painted trim. The wall is covered with Japanese grass cloth finished with a molded and carved cornice. The furniture is of mahogany and the upholstery is in green.

White lace curtains hang at the windows, while green and brown brocaded silk curtains are hung at the door openings. The open fireplace is built with black and white marble facings and hearth and it has a mantel of good design.

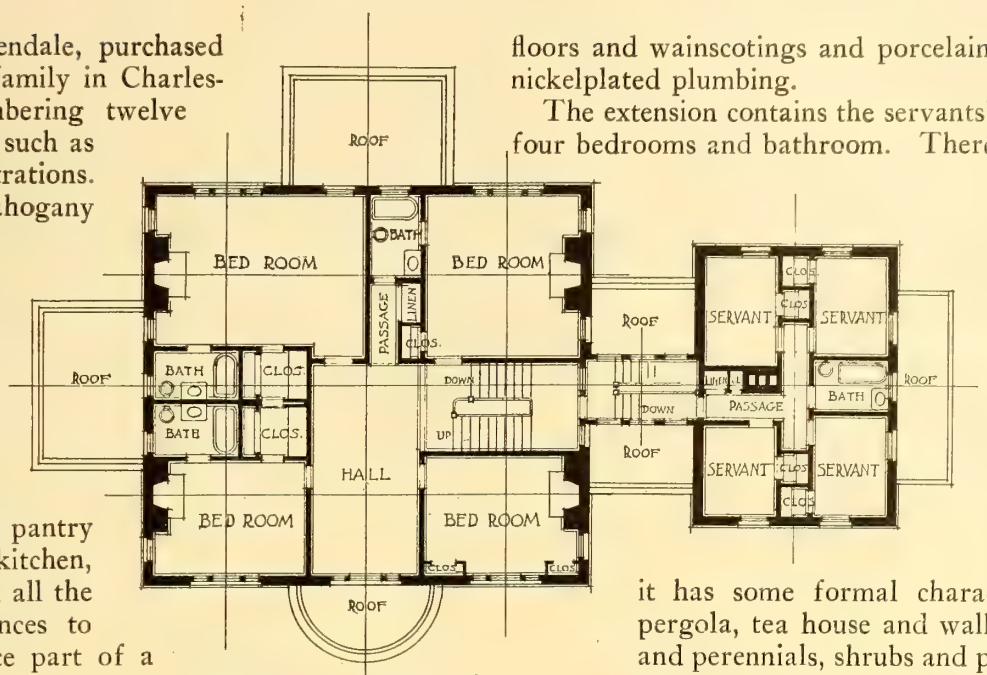
The living-room has a white-enameled trim and a wall covering of crimson brocaded silk. Crimson velvet draperies are hung at the doors. Similar curtains are hung at the windows over softer ones of lace. The fireplace has white and black marble facings and hearth, and a Colonial mantel and overmantel of attractive style.

The sun-room, which opens from the living-room, also has a white-enameled trim and walls. The windows are hung with green and yellow cretonne curtains.

Opening from the living-room, and also from the hall, is the dining-room, which is one of the most important and delightful rooms in the house. The color scheme is gray and white. The trim is painted white. The walls have a low paneled wainscoting, above which they are covered with a forest wall decoration in a gray and white. The east end of the room is very attractive, with fireplace, fluted pilasters and archways. The fireplace is built of brick, laid in white mortar, and has a mantel and paneled over-mantel. The important feature of the dining-room is the furniture, consisting of a most unusual

set of Spanish Chippendale, purchased from an old Spanish family in Charleston, S. C., and numbering twelve chairs and two settles, such as are shown in the illustrations. These pieces are of mahogany mounted with gold. The two sideboards, the china closet and the sidetable are also of mahogany, and are genuine antiques.

The butler's pantry is fitted complete with drawers, dressers and cupboards. From the pantry a door opens into the kitchen, which is provided with all the best modern conveniences to be found in the service part of a well-regulated house. The laundry



SECOND FLOOR PLAN

floors and wainscotings and porcelain fixtures, with exposed nickelplated plumbing.

The extension contains the servants' quarters, consisting of four bedrooms and bathroom. There are extra guest rooms on the third floor, and the cemented cellar contains a furnace room, fuel room, cold-storage room and vegetable cellar.

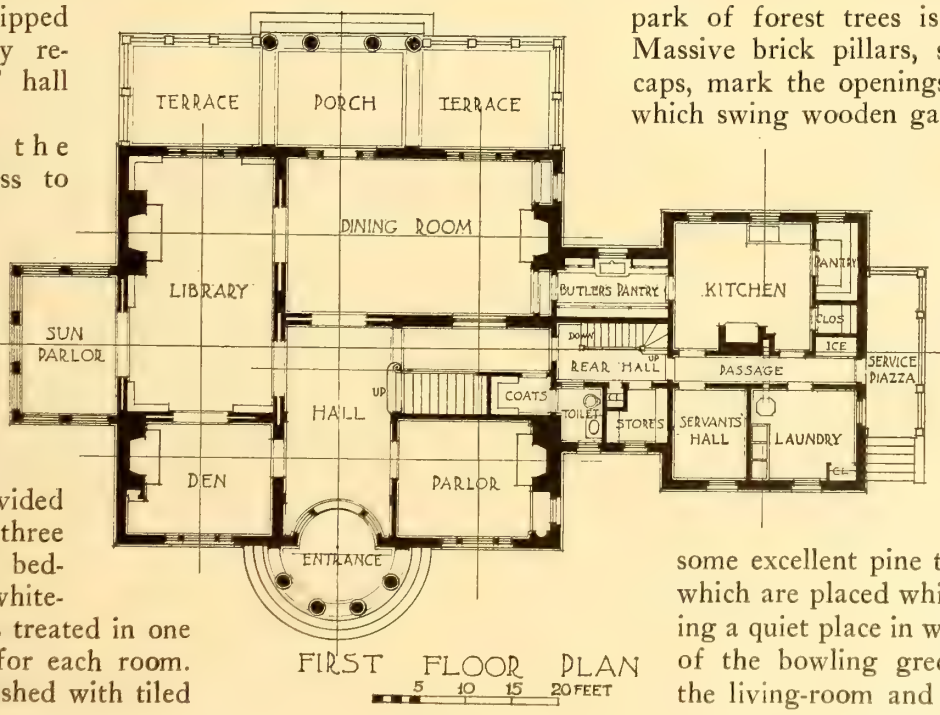
There has been much planting done about the house, and the garden at the rear of the house, which is reached from the terrace, is interesting, for it has some formal characteristics, including its pergola, tea house and walks bordered by annuals and perennials, shrubs and plants. The great brick wall dividing the bowling green from the natural

The roadway terminating into a circle forms the approach to the house

is thoroughly well-equipped and up-to-date in every respect, and the servants' hall is an excellent adjunct.

The rear hall and the staircase form an access to the cellar and to the second story. This hall contains a large well-fitted closet for stores. From the front staircase hall a coat room and toilet-room is reached.

The second story is divided into four bedrooms and three bathrooms. Each of the bedrooms has a fireplace, white-enameled trim, and walls treated in one particular color scheme for each room. The bathrooms are furnished with tiled



FIRST FLOOR PLAN

park of forest trees is also worthy of notice. Massive brick pillars, surmounted by cut-stone caps, mark the openings for the gateways from which swing wooden gates of simple design and construction. After passing through this gateway, a flight of two stone steps leads one beyond the bowling green, with its brick wall enclosure, to the primeval forest of tall pines, which gives the house so fine a setting. The bowling green has some excellent pine trees, under the shade of which are placed white-painted settles, affording a quiet place in which to rest. To the left of the bowling green, and within view of the living-room and sun-room, is the formal

The walls of the reception-room are paneled and covered with watered silk

The living-room has a white painte crimson broc

The walls of the hall are paneled from the floor to the ceiling and are painted with white enamel

The dining-room has a low wainscoti forest decoration in

im and walls covered with

Japanese grass cloth of a golden brown for the walls and a black painted trim is the color scheme of the den

above which the walls have a
ay and white

The important feature of the dining-room is the set of Spanish Chippendale chairs

The walls of the reception-room are paneled and covered with watered silk

The living-room has a white painted trim and walls covered with crimson brocade

Japanese grass cloth of a golden brown for the walls and a black painted trim is the color scheme of the den

The walls of the hall are paneled from the floor to the ceiling and are painted with white enamel

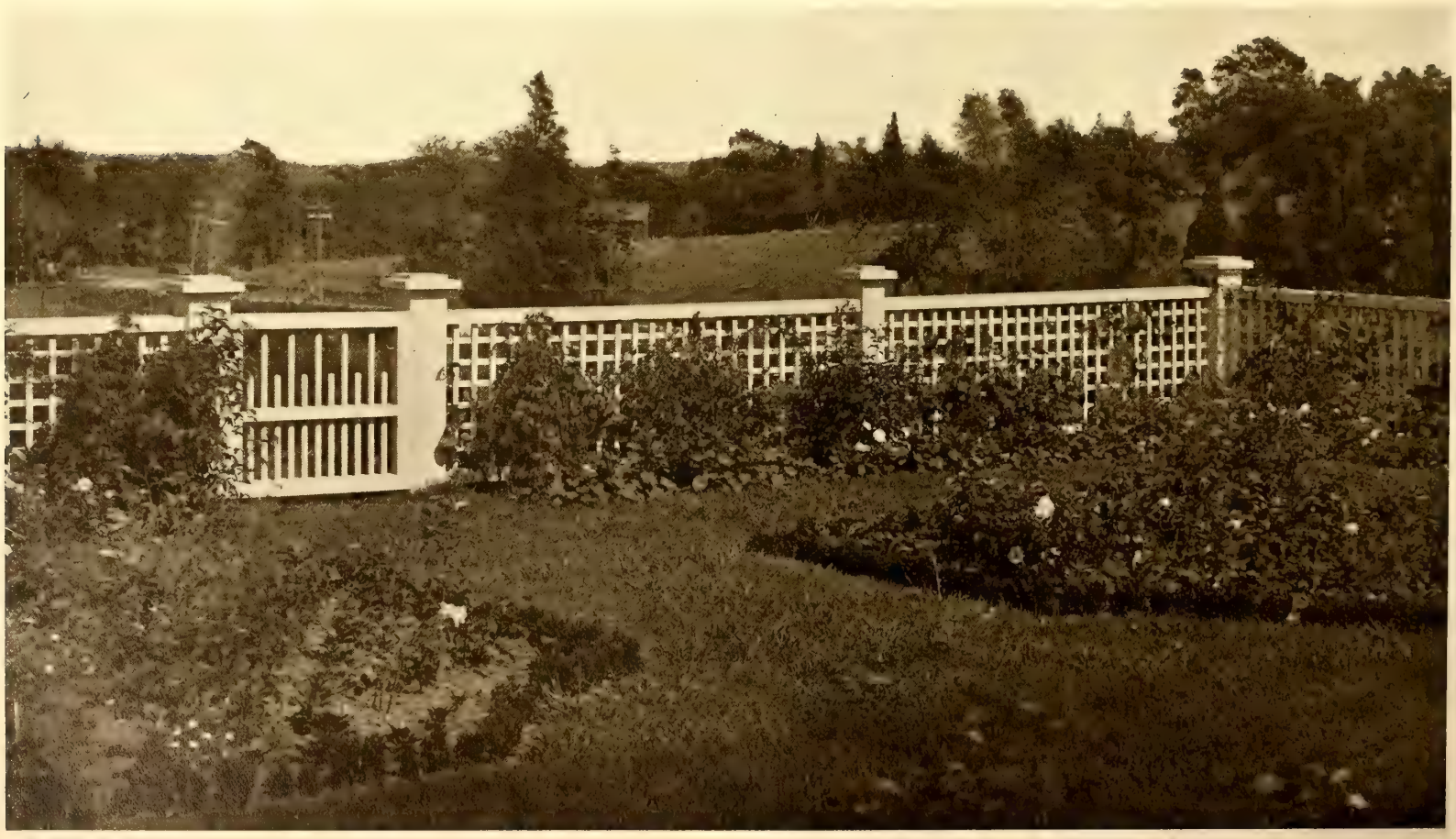
The dining-room has a low wainscoting above which the walls have a forest decoration in gray and white

The important feature of the dining-room is the set of Spanish Chippendale chairs

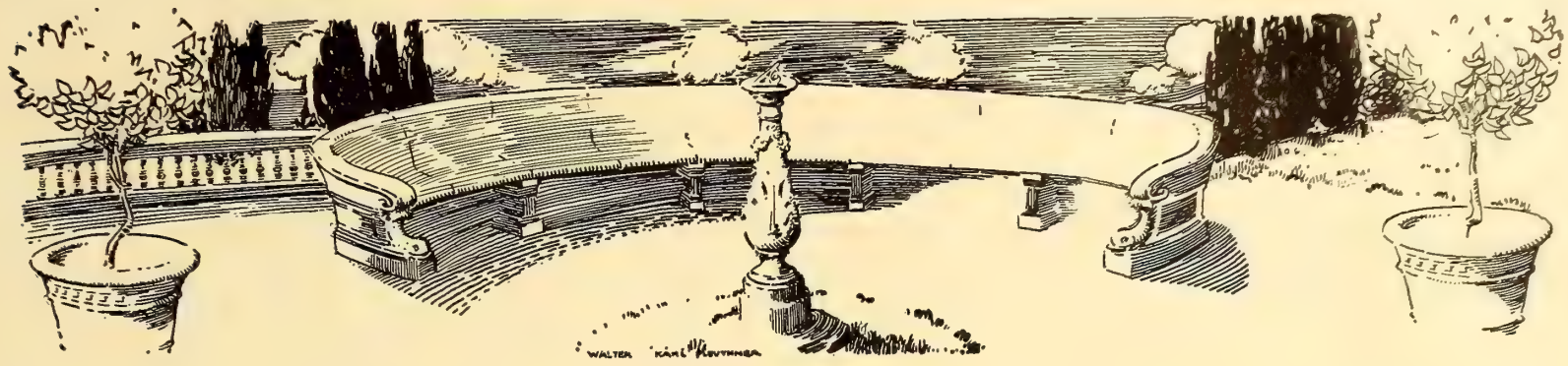
The garden at the rear of the house is inclosed with a red brick wall

garden, enclosed with a white-painted fence of Colonial style. This garden is laid out in a geometrical form, with the various shaped beds filled with plants and shrubs, which give a brilliant coloring continually, from the hyacinth and daffodil of early spring to the end of the fall, when the main beds are a mass of cosmos beauty. A central walk extends through the garden, broken only by a sun-dial, placed in the center of the garden, from which the other walks radiate. A tea-house is built at the end of the walk, from which a broad vista is obtained of the distant hills and the surrounding country. Messrs. Fehmer and Page, of Boston, Mass., were the architects of this splendid house, and they have planned it and laid out the grounds to meet the requirements of a country estate of distinction.

The beauty of the design of this house lies in the fact that both the owner and the architect had but one idea, and that was to build so that there would be something real in its design and plan, and avoid any purely surface display.



A latticed fence painted white forms the inclosure for the formal garden



Garden Notes

Annual Vines

THERE are many occasions when a quick-growing annual vine can be used with good effect, though, as a general rule, it is better to plant the slower-growing perennials even if the first year's growth does leave things looking a little bare. Certainly one should not plant annuals and shrubby vines together because the annuals are sure to gain the upper hand and shade and choke the perennials out, making them lose very nearly a year's growth and delaying by so much the time when they will themselves be sufficient.

The majority of shrubby vines may be bought in pots and planted at any time up to the first of July, so late planting is no excuse for using annuals.

The annuals may be planted, however, on temporary structures such as fences, buildings, old trees, etc., which are soon to be removed, or they may be used to cover any unsightly piles of earth or stones which by force of circumstances have to be left in place all summer.

A rented house, too, which is ill provided with vines may be shaded and decorated with annuals at slight expense and little trouble. Almost anything which is unsightly, buildings, fences, ash heaps, walls, piazzas, etc., can be covered with some of these vines.

The following list gives the most useful varieties:

COBOEA SCANDENS.—"Cups and Saucers." Grows 25 feet in a season, bearing large bell-shaped purple or white flowers and clinging to any rough surface by means of tendrils.

CONVOLVULUS MAJOR.—The familiar morning-glory, grows 15 feet high and bears a profusion of beautiful flowers. A twining vine.

DOLICHOS LABLAB.—"Hyacinth bean," growing 10-20 feet in a season and bearing purple and white flowers in clusters, followed by ornamental beans.

HUMULUS JAPONICUS.—Japanese hop, reaches 15-20 feet and has foliage like the common hop. The variegated form is said to be interesting. Easy to grow.

IPOMOEA COCCINEA.—Star Ipomoea, 10 feet, with very small scarlet flowers which are, however, produced in abundance.

IPOMOEA QUAMOCLIT.—Called Cypress vine, because of its delicate cypress-like foliage. Small star-shaped flowers scarlet and white.

IPOMOEA GRANDIFLORA.—Moonflower, white flowers half foot across, opening in the evening or on cloudy days.

JAPANESE MORNING-GLORIES (Ipomoea).—Are rapid-growing vines with large flowers in a wide range of color. A small notch should be filed in each seed of this and the moonflower to make the germination more rapid.

IPOMOEA VERSICOLOR (Mina lobata).—Is another of the innumerable varieties of Ipomoea. It has rich crimson flowers and grows 15-20 feet high.

THE SCARLET RUNNER BEAN.—With scarlet and white blossoms is a useful and beautiful vine. The beans are very good for the table.

TROPAEOLUM PEREGRINUM.—The canary bird vine, and Tropaeolum majus, the nasturtium, are both useful and well known.

THE GOURDS are interesting because of their fruit which is fantastic in shape and marking. They are rather coarse in foliage and habit, but cover unsightly effects quickly and cheaply.

All these vines are tender and should not be planted until all danger of frost is past. Decoration Day is a good time for such work.

Growing Tomatoes

It will be found much easier and cheaper to buy tomato plants for a small garden than to raise them, because they are difficult to raise from seed and the plants are very cheap. A dozen plants well cared for will probably supply a family of six. Potted plants are best and should be used even though they cost more than those grown in flats.

The ground for tomatoes should be thoroughly prepared, spaded deeply early in the season and later on dressed with manure and forked over again. Throughout May the ground should be cultivated often to make it light and friable. Successive cultivations tend to make the soil warm up more quickly and to conserve moisture.

The young plants should be bought and planted not much before the 30th of May. The tomato is a tender tropical plant which is quickly killed by frost and is seriously checked in growth by a temperature of 45 degrees or lower.

It is doubtful if a tomato plant ever recovers from the shock of a cool night. Though it may live, its vitality has been reduced and it can not bear so well. Early planting in unsuitable weather will not hasten the maturity of the crop, so be patient and wait for the 30th of May to set them out.

The egg plant is closely related to the tomato and suffers in the same way and should be similarly managed.

Training the tomato vines on trellises improves the size and quality of the fruit, but probably decreases the yield. The best support for the vines is four 2x2-inch stakes 6 feet long driven in the ground 16 inches apart, forming a square with the plant in the center. One stalk is trained and tied to each stake, and extra stalks and side branches are cut out.

Corn

Corn is another thing which can not be hastened by early planting. It needs hot days and mild nights and a warm soil to make it grow fast, and in this latitude we seldom have settled summer weather until the middle of May, and the ground is not really warm until that time.

There are many varieties of sweet corn, and the choice must depend somewhat on the locality, but the sweetest and best are the yellow varieties such as "Golden Dawn," "Golden Bantam." These mature quickly; in less than ninety days sometimes, and can be planted every two weeks for a succession. They are small stalks and have small ears, but are productive and make less trouble in a small garden than the larger varieties.

"Stowell's Evergreen" might be planted twice for the late crop, but any other variety is superfluous.

"Country Gentleman" is a good kind, but too much like pop-corn in the way it grows on the ear. An ear with regular double rows is easier to eat than the crowded kernels of "Country Gentleman."

Other good varieties are "Peep o' Day" and "Aristocrat," both small, but productive and sweet.

CORRESPONDENCE

The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

By Alice M. Kellogg

Author of "Home Furnishing: Practical and Artistic"

LIGHT-WEIGHT FURNITURE

THE reply in this department for April to a question about furniture that is easily handled has drawn out the following letter from another reader whose needs are similar and who has sent a photograph of two pieces that have been helpful.

H. G. writes: "Your response to an Illinois reader, who asks for furniture that is easily moved about, as she takes care of her home herself, appeals to me, as I have the same experience, and am also not strong enough to lift heavy chairs or seats. I would like to have your correspondent know about the Canton chairs, and inclose a photograph of one of

Light-weight furniture

the small ones with a willow stool which I use for a seat sometimes, and sometimes as a stand or table. Or, it comes into use for a basket when the children's toys are gathered together for the night. I find the Canton chair the lightest in weight of any of the wicker makes, and adapted to bedrooms, sitting-rooms or for the piazza. It does not require a thick cushion in the seat, as a thin pad of cotton felt is all that is needed, and this can be made up at home. This is only one of the different varieties of these chairs, and it costs five dollars and a half. I hope this information will reach Mrs. C. N. J., who wrote to you on this subject."

Any further ideas from other home-makers who are interested in this problem of providing chairs that are not too cumbersome for easy lifting about will be passed on for general benefit in this department.

IS GLAZED CHINTZ PRACTICAL?

"Is glazed chintz a practical article for the home?" asks an Ohio reader, V. L. J. "It looks so clean and fresh that I would like to use it in some way, but I have only seen it in the sample and am afraid of making a mistake with it."

Glazed chintz is a very popular fabric in England, but is not used very much in this country. Although it hangs stiffly it is sometimes put up at the windows, first being lined with sateen. It usually is surmounted by a lambrequin or pleated valance. In Southern homes it is sewed into window shades and made a decorative feature in a bedroom, keeping the walls and curtains quite plain. The white background makes it suitable for any room in which there is white woodwork and white furniture. Its most practical use is for upholstering shirtwaist boxes, fastening it down with nickelplated tacks. The cost is about the same as the unglazed chintz or cretonne, varying from sixty-five cents a yard (thirty-one inches wide) to a dollar and seventy-five cents. The range of patterns and colors is small, roses and hollyhocks appearing more often than anything else.

CURTAINS AND BEDSPREAD FOR A LITTLE GIRL'S ROOM

A Virginia reader, Mrs. F. D. S., inquires about something dainty and out of the ordinary for covering the bed in her daughter's room, and also for window curtains to match. "Is there anything thinner than cretonne for this purpose? I only wish to put up one pair of curtains, and cretonne is too thick to use in this way."

For this room there is a new combination this spring of a printed muslin in thin goods, with a cretonne in the same pattern. The first may be used at the windows of this little girl's room, and the cretonne may be made up as a spread. If the bed is of metal, brass or white-painted iron, a valance also may be hung around the lower part of the bed.

With the two-toned pink paper on the walls, finished with a narrow rose border under the picture rail, the muslin with roses scattered along a green rope of leaves would be pretty.

FOR THE BACKS OF CHAIRS

A country reader, J. T., writes: "I have seen nothing in your department about a small problem of my own, so now I venture to bring it to your attention. Is there anything that can take the place of the objectionable 'tidy' for protecting the back of an upholstered chair? I have been using a white linen towel with handsome drawnwork at the narrow ends, but its whiteness attracts too much notice in the subdued tones of my living-room. There seems to me a specific need for something that is both practical and artistic for this place. What can you suggest?"

(*Continued on page xvi*)

Garden Work About the Home

By Charles Downing Lay

WE HEAR much of Japanese gardens now a days. They are being ordered by millionaires for their country places, and are being built by daring amateurs, so it is not surprising to have E. P. R. ask how they are made. It would be more reasonable of him to ask "What is a Japanese garden?"

It is a symbolic expression of Japanese feeling done with consummate skill, and might better be called a picture of a landscape done in living plants, than a garden.

To our minds a garden is a place set aside for growing flowers or fruits, but in the so-called Japanese gardens the plants are a small part of a more or less naturalesque scene.

No matter what the size, the mountains, lakes and rivers are always there and always in the same conventional arrangement, which to our eyes looks picturesque and curious, but from which we get none of the intellectual and imaginative pleasures which it gives the Japanese.

Every feature of the scene has a name and suggests some poetic thought; the same though to each observer, so well understood are the conventions and so well ordered is the garden.

They are usually small, because mountains can not be imitated on a large scale, and they should be seen without people in them because people destroy the effect, and they should be completely isolated, because they look childish and petty in contrast with buildings or natural scenery.

The Japanese gardener frequently resorts to imitative conventions which are satisfactory if one accepts them, but they may appear silly deceits.

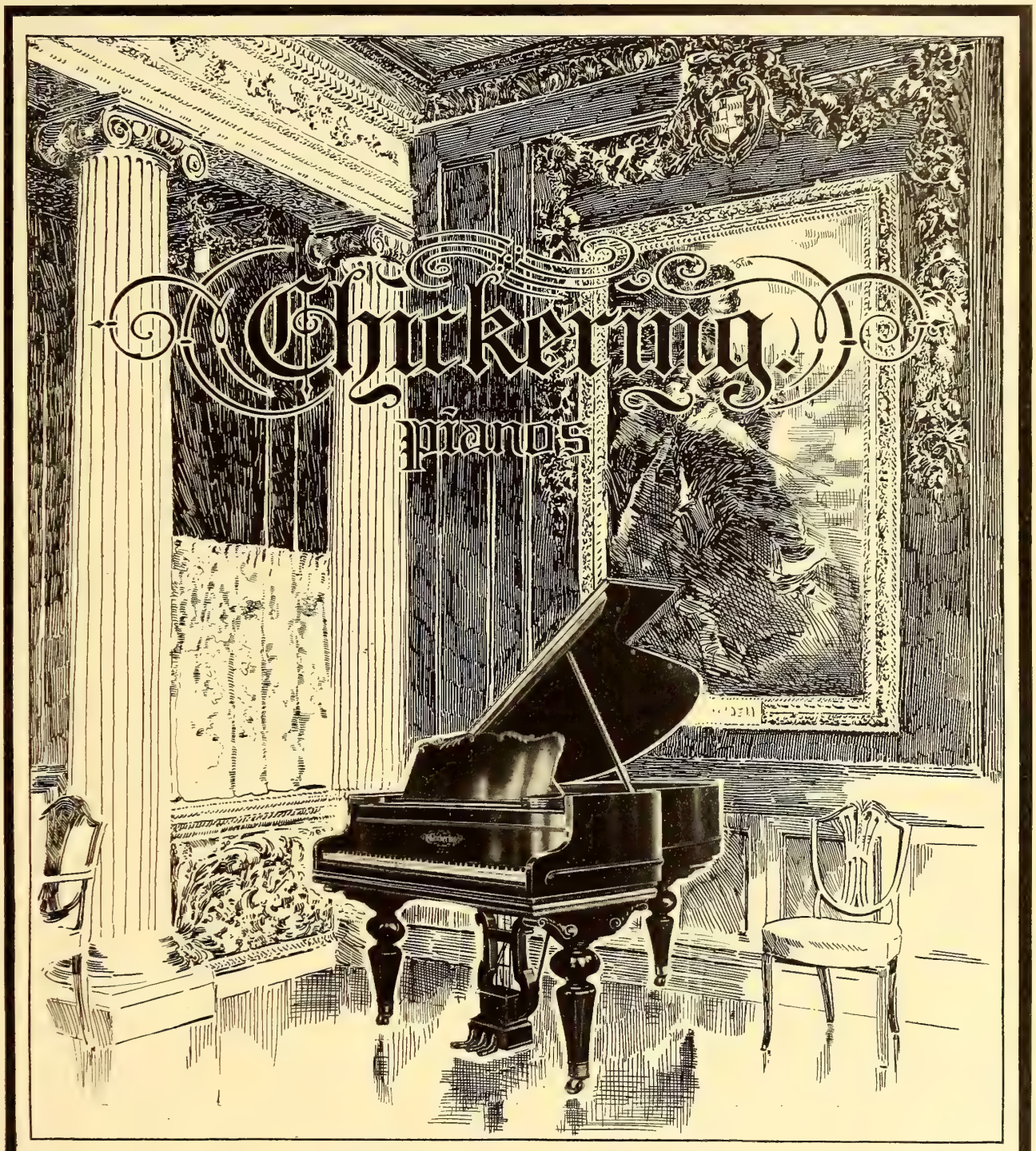
Thus lakes and rivers are represented by smoothly spread sand. Perhaps there is no intent to deceive. It may be a common agreement that sand raked smooth, having that one quality of still water, will count as water. Such agreements are easy for children, and why should grown people not play that the sandy stream is water and refuse to step in it for fear of a wetting, but use the bridges and stepping-stones to get across?

Artistically the Japanese are right, the dominant characteristic of water is its smoothness; its transparency, its color, its reflecting qualities, are nothing compared to the great contrast of its surface with the surrounding landscape. But I doubt if our imaginations are sufficiently developed to accept smooth, dry sand in place of water.

In a similar way the Japanese represent brooks by beds of dry stones, and water-falls by rocky precipices. We recognize the logic of this and call such streams of cobbles dry brooks.

The rough stones which are used in Japanese gardens are prized for their irregular shapes, and are particularly valued if their form suggests something different. A stone

(*Continued on page xviii*)



The Chickering Piano

has been made in Boston without interruption for eighty-six years. It has always been famous for its beauty *of* tone *and* great durability. There can be no better piano made than *The* Chickering--the best materials, the best workmanship, the largest experience are all employed in its construction. It is

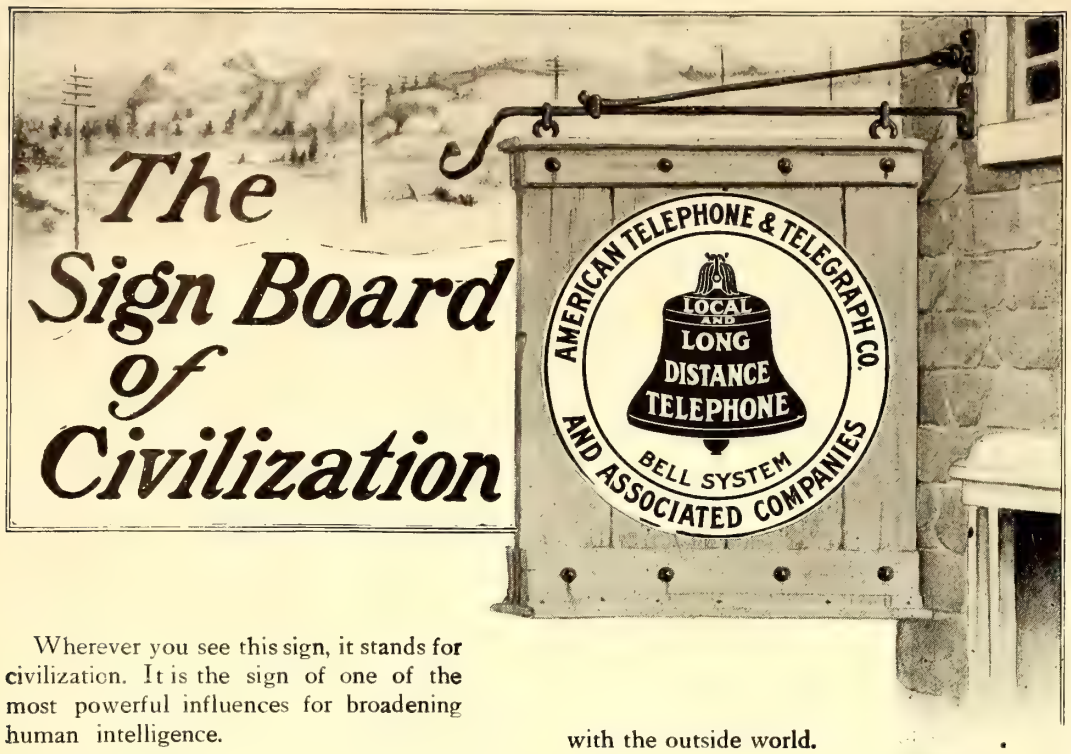
"*The* Oldest in America *and* the Best in the World."

Quarter Grand, Style R, $600. Upright, Style K, $500.

Chickering Pianos may be bought of any regular Chickering representative at Boston prices with added cost of freight and delivery. Our literature will be sent upon request.

Made Solely by CHICKERING & SONS

791 Tremont Street, Cor. Northampton Established 1823 Boston, Mass.



Wherever you see this sign, it stands for civilization. It is the sign of one of the most powerful influences for broadening human intelligence.

The universal service of the Bell companies has provided it—has spread an even, highly developed civilization through the land. It has carried the newest impulses of development from town to town and from community to community.

Bell telephone service has brought the entire country up to the same instant of progress.

It has unified the Nation.

As soon as a new town springs up in the woods, on the plains, at the cross-roads, or walled in by mountains, the signpost of civilization is erected—the sign of the Bell. Telephone service puts the people of that town into communication with one another and with the outside world.

It puts the town on the map.

You can see this march of progress right in your own neighborhood. Every little while some neighbor has a Bell telephone put in. If you have one, every new subscriber enlarges the scope of your personal contact. If you have not, every new telephone makes you the more isolated—the more cut off from the activities about you.

Just as individuals in your locality use the telephone for mutual convenience, so towns and cities in *different* localities are served and advanced by the long distance telephone.

Each contributes to, and benefits by, the broad universal service of the Bell.

The busy man who wants to accomplish more than he is now doing can well afford to make use of the Bell Long Distance service. It is the most efficient office assistant imaginable. Every Bell Telephone is a Long Distance station.

The American Telephone and Telegraph Company
And Associated Companies

One Policy, One System, Universal Service

It does not matter which floor you are going to cover, whether bedroom, dining-room, library, parlor, or hall,

CREX is the floor covering you need

You need CREX for the following reasons:
It is absolutely sanitary.
It is suitable for any surroundings.
It maintains cleanliness and promotes health.
It is the most economical because it is pratically indestructible.
It greatly reduces the labor of the housekeeper.

As a floor covering for summer cottages or porches CREX has no equal

CAUTION: Avoid imitations. The genuine bears the CREX label
Sold by all Up-to-Date Carpet and Department Stores.
Send for Booklet H. Beautifully Illustrated.
CREX CARPET COMPANY, 377 Broadway, New York

Problems in Home Furnishing

(*Continued from page xiv*)

This writer is correct in saying that the white linen, even in its fine decoration, is obtrusively apparent in a living-room of this kind. The best thing to use is a strip of Bulgarian or Turkish embroidery, selecting one with colors that harmonize with the chair covering. Some of these strips are very beautiful, and if not found in the right shape they may be adapted to the place on which they are to rest by careful needlework.

Some of the hand-woven linen strips in grays and browns may also be used for chair backs, and when these are made to order both design and colors may be planned for the place where the strip is to be laid. It is no waste of money to provide chair backs that are suitable for their surroundings, as it saves the expense of reupholstering the entire chair.

WALL COVERING FOR A LIVING-ROOM

"I should be very much pleased to have some plan for the walls of our new living-room. We expected to use a soft green paper, as we liked this in our old house, but the woodwork is so different that the green looks very cold and somber here. The grayish-brown, which the chestnut trim, bookcases and fireside seats are finished in, has puzzled us not a little, as we try to imagine what color would combine with it on the walls. We have a mahogany piano, a sofa and chairs with mahogany frames, and a number of water colors with gold frames. The rugs are in Bokhara design, in deep red tones with some dark, deep blue showing."—Long Island Reader.

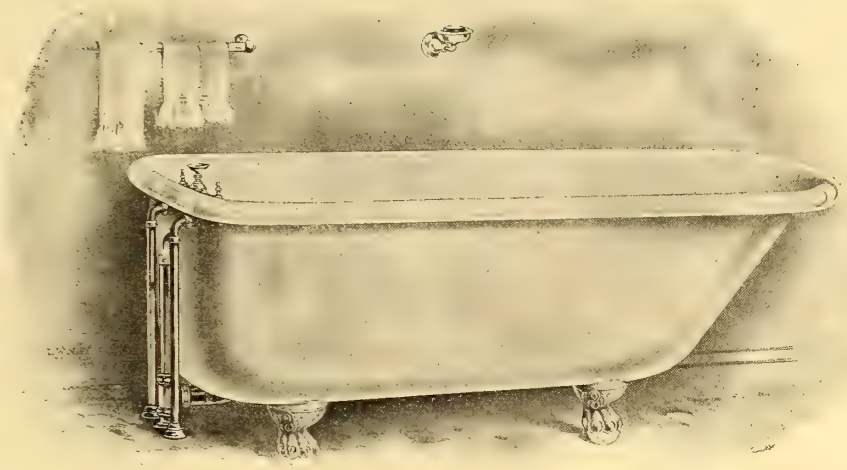
The stain that is used for the trim of this living-room is probably one of the new weathered grays which repeats the beautiful tones one sees on the trunks of the trees. A well-printed tapestry paper of greens and blues (one of the French patterns) looks extremely well with this woodwork, if the cotton tapestry itself is too expensive to adopt. Another suggestion to make the room lighter is to use a Japanese grass cloth at $2.50 a single roll, choosing a neutral, silvery tone. Still another idea is for a burlap that is brushed with gold, selecting an old blue that tones in with the blues in the rug. If a plain wall paper is desired (and this will show the water color paintings to the best advantage) an English silk fiber at eighty cents a single roll is a durable choice, as the color does not fade. Still cheaper are the domestic ingrains in warm gray tones and texture effects in light browns, any of which would be safe with the conditions named by this correspondent.

WHAT TO PUT IN A HALL

F. W. R., an Arkansas subscriber writes: "I am sending you, under separate cover, the plans in blue print of my new house. Please tell me specifically what furniture to buy for the different rooms of this house. The hall is the biggest problem, and you will get an idea of its spaces from the drawings. We simply do not know what to put in this large central hall to make it attractive. Can not you help us with this problem in particular?"

Suggestions for the different rooms having been sent by mail, the hall treatment is given in print for the benefit of other readers. The spaces of the floor show that a rug in stock size, nine by twelve feet, can be laid between the entrance door and the stairs. The choice of this rug will make or mar the success of the hall, and for this reason should be given most careful selection. If an Oriental rug is out of the question, then a thick, domestic one in good colors and closely-set design may be the alternative. Whatever is the predominating tone in this rug may be repeated in the

FIFTY FOUR YEARS OF QUALITY
1855 1909
WOLFF'S PLUMBING GOODS



"Corona" Enameled Iron Bath. H-6504.

Wolff Investment Value

THERE are as many conditions and degrees of responsibility entering into the guaranteeing of plumbing fixtures as there are firms issuing guarantee labels. Architects have realized the importance of these features for a long time, but it is only of late years that the layman has been interested.

The Guarantee Tubs cost only a trifle more than the cheap inferior article on the market. The cost of installation, that is, labor and material, required incidental to installing a bathtub, is the same for a cheap tub as it would be for a *"Corona"* fully guaranteed tub.

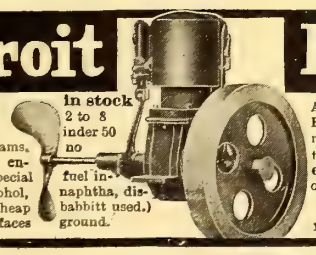
With the knowledge that many tenants and investors often base their judgment of the construction of the building on the class of plumbing fixtures that have been used, wise architects advise the use of ***Wolff Plumbing Material*** exclusively, even in purely speculative operations.

L. WOLFF MANUFACTURING COMPANY
MANUFACTURERS OF
PLUMBING GOODS EXCLUSIVELY
THE ONLY COMPLETE LINE MADE BY ANY ONE FIRM

SHOWROOMS: 91 DEARBORN STREET, CHICAGO
DENVER, COLO. BRANCH OFFICES: TRENTON, N. J.

Minneapolis, Minn.: 615 Northwestern Building
Kansas City, Mo.: 1209 Scarrett Building
San Francisco, Cal.: Monadnock Building
Cleveland, Ohio: Builders' Exchange
Washington, D. C.: 327-328 Bond Building
Buffalo, N. Y.: 77 Richmond Avenue
Omaha, Neb.: 1108-1112 Nicholas Street

2 H.P. Detroit Engine $29.50



Other sizes at proportionate prices in stock ready to ship. Single cylinder engines, 2 to 8 h. p.; double cylinders 8 to 20 h. p.; Four cylinder 50 h.p Engines start without cranking. No cams, sprockets, only three moving parts. All engines counterbalanced. No vibration. Special jector burns gasoline, kerosene, coal oil, alcohol, fuel injector naphtha, distillate. Plastic white bronze bearings (no cheap babbitt used.) Crankshaft drop forged steel. Bearing surfaces ground.

Adjustable steel connecting rod. Waterproof ignition system. For your launch, sailboat, rowboat, stern wheel boat, or railroad track car. 20,000 satisfied users, free catalog and testimonials. **Demonstrator Agents wanted in every boating community.** Special wholesale price on first outfit sold.

DETROIT ENGINE WORKS
1206 Jefferson Ave. DETROIT, MICHIGAN, U. S. A.

Stained with Cabot's Shingle Stains
Train & Williams, Architects, Los Angeles, Cal.

The House Beautiful

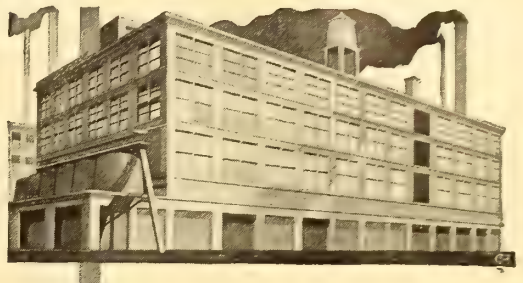
is much more beautiful when stained with the soft, harmonious tones of

Cabot's Shingle Stains

Their colors have the same depth and richness that is found in nature, and houses stained with them melt harmoniously into the landscape. They cost 50 per cent. less than paint, wear as long and grow old gracefully—no cracking and peeling like paint—and being made of Creosote they preserve the wood.

Samples on wood and Catalogue sent free on request
Agents at all Central Points

SAMUEL CABOT, Inc., Sole Manufacturers, 131 Milk Street, BOSTON, MASS.



PORTLAND ATLAS CEMENT — DIE ATLAS PORTLAND CEMENT CO. — 30 BROAD ST. NEW YORK
NONE JUST AS GOOD

FIRE

the greatest danger that menaces your factory

You can insure your factory against fire loss, but that does not prevent fires or protect you in consequent losses.

The safe, sensible thing is to have a factory that is in itself a protection against fire—a factory of reinforced concrete.

Reinforced concrete is fireproof—not "slow-burning" or near fire-proof, but unburnable. Actual fires prove it.

Such a factory will stand off fire from surrounding buildings; prevent the spread of an inside fire or damage by water, and secure the lowest rate of insurance given to buildings.

If you are interested in a factory, or consider building, send for and read our book:

"Reinforced Concrete in Factory Construction"

It isn't a book about ourselves or our product; it is a work by an expert engineer on factories, warehouses and shops built of concrete, with illustrations and detailed descriptions. Our interest in your factory lies in the fact that we make the brand of cement that you will unquestionably use if you investigate the various brands of Portland Cement and learn (as you will) that

ATLAS PORTLAND CEMENT

is the standard in cements—the brand that is always pure and always uniform; the brand the Government bought to the extent of 4,500,000 barrels, for use in building the Panama Canal.

The book will be sent on receipt of 10 cents to pay delivery charges.

Other books:

"Concrete Country Residences" (delivery charges 25c.)

"Concrete Cottages" (sent free.)

"Concrete Construction about the Home and on the Farm" (sent free.)

If your dealer cannot supply you with Atlas, write to

THE ATLAS PORTLAND CEMENT CO.
DEPT. 10, 30 BROAD STREET, NEW YORK

LARGEST OUTPUT OF ANY CEMENT COMPANY IN THE WORLD — OVER 40,000 BARRELS A DAY

Garden Hose That's Built To Wear

Ordinary garden hose *wears out from the inside.* The least water pressure tends to unwrap it. (You know how its made—wrapped with canvas—like a rag around a sore finger.) Kinks crack it and then come the leaks.

ELECTRIC GARDEN HOSE

Wears twice as long as ordinary hose. It will stand a higher water pressure than any other rubber hose. We guarantee it for 200 lbs. to the square inch. 400 lbs. won't burst it. It can't kink.

In brief, this is Electric building—a series of woven jackets (in one piece) of high-test cotton fabric alternating with layers of fine grade rubber. The whole vulcanized into a solid seamless piece. You can buy any length up to 500 feet. Although Electric is the finest hose ever made, it costs only a cent or two more than common. If you are in the market for hose, no matter how little, Electric is worth looking for. Electric trade mark is on the hose. First-class seedsmen and dealers sell it. If yours doesn't keep it, write to

ELECTRIC HOSE & RUBBER COMPANY
WILMINGTON, DELAWARE

Spend Your Summer at Muskoka

Canoe in innumerable channels and waterways among green islands—fish, bathe—live on and in the water—and on shore play golf and tennis.

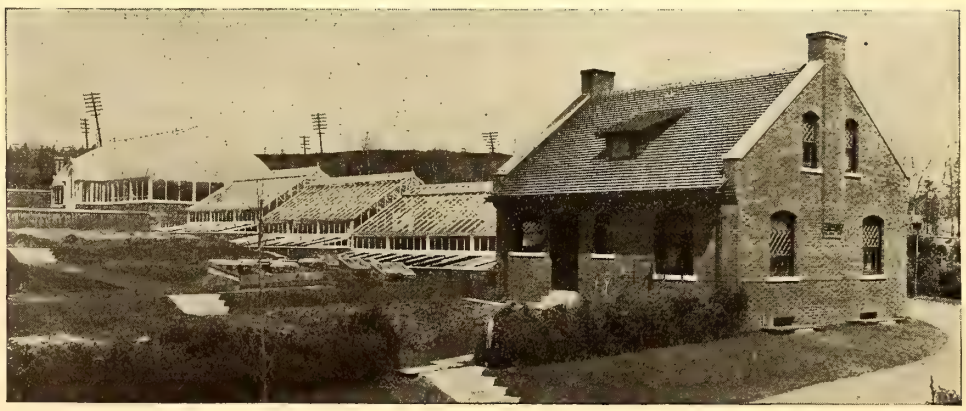
Muskoka Lakes, Canada

Less than a day's journey from the principal American cities, via Niagara Falls, Detroit, Chicago. Solid trains from Buffalo and Toronto. Modern hotels set in fragrant pines afford splendid service. Hay fever is unknown. Handsomely illustrated descriptive matter free on application to

G. W. VAUX, 917 Merchants Loan & Trust Bldg., Chicago
F. P. DWYER, 290 Broadway, New York
E. H. BOYNTON, 360 Washington St., Boston
W. ROBINSON, 506 Park Bldg., Pittsburg

W. E. DAVIS, Passenger Traffic Manager
MONTREAL

G. T. BELL, General Passenger and Ticket Agent
MONTREAL



AN UNIQUE GROUP OF GREENHOUSES

The garden is laid out in terraces, and the houses are stepped up to conform.

The palm house gives an ornamental accent at one end and the gardener's cottage at the other, making a well-balanced and altogether pleasing layout. And this is the sort of thing we can do with our Flat Iron Rafter greenhouse construction.

Always glad to send you illustrated matter, or will come and talk greenhouses with you.

Hitchings & Company
1170 Broadway New York

portieres at either side to break up the stiff lines of the openings.

The wall space above the mahogany wainscot may be covered with a Japanese leather paper in mahogany and gold in the burlap effect. Some kind of settle or divan may be placed against the wall, and a drop-leaf table may stand near the door for holding a card-tray and mail. A mirror, handsomely framed, is always useful and decorative in a hall hung above a settle or table. For holding umbrellas there are bronze tiles made in Japan, or one may be found of mahogany with brass hoops. The lighting features are not mentioned by this correspondent, but these are of great importance in making the hall distinctive.

Garden Work About the Home

(*Continued from page xiv*)

which is shaped like a camel, or which is very like a whale, is an acquisition for any garden.

These stones are named from their shapes and positions, like this: statue stone, guardian stone, etc. Frequently they are inscribed with some poetic thought in the beautiful Chinese characters.

The trees in a Japanese garden are carefully trained, dwarfed and clipped, and have lost all semblance of what we should call their natural beauty. Every quaint shape has a name, and each bend and twist and grouping of branches conveys an artistic idea to the Japanese.

The natural scenery of Japan is as picturesque and comprehensible as ours, but I shall regret the day when we begin to imitate our scenery on garden plots ten by twelve feet.

In one Japanese garden the details are named in this way: Fujisan Viewing Hill, Azuna Arbor, Hut of the Salt Coast. Thus we might have a "Mt. Washington Overlook"; "Palisades, from Grant's Tomb"; "Haystack on the Salt Marshes, New England"; or take the title of any picture of a landscape exhibited this winter and concoct a suitable imitation in the garden.

Japanese stone lanterns have never seemed reasonable to me. Their wide tops, like enormous Panama hats, may be excellent protection for the rice paper which they use instead of glass, but they are not beautiful. Nothing is more ridiculous than our way of using these lanterns for gateposts or to flank the steps of a colonial mansion.

These lanterns must have great charm at night, however, when they are lighted, and their faint gleam seems like the candle in a cottage window on a distant hillside. The illusion is very perfect.

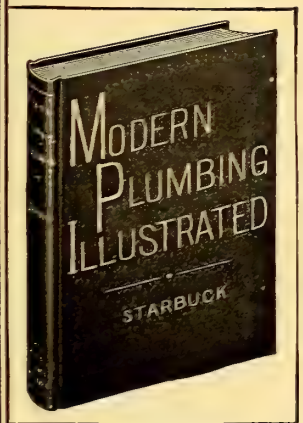
There is much that we can learn from the Japanese. Their use of rough stones for stepping-stones, posts and steps is admirable, and their rustic work and wooden structures are reasonable and beautiful.

To transport their gardens or their houses here, except for exhibition in a museum, is an inconceivable violence to our instincts and temperament as well as to the things themselves.

Let us rather build a garden in the Japanese manner, making it by hand and with the materials which are easiest to get. The designer of such a garden must superintend the placing of every stone and bush, because the beauty of such work must depend upon the skill with which the various elements are combined in a perfect whole, and not upon the beauty of the materials which go into its making.

It would be foolish here to build hills as they do in Japan. We should start with the ground almost as it is and embellish that rather than to try making something new and strange.

Modern Plumbing Illustrated



By R. M. STARBUCK

400 (10¼ x 7½) PAGES

55 FULL PAGES OF ENGRAVINGS

PRICE, $4.00

¶ A comprehensive and up-to-date work illustrating and describing the Drainage and Ventilation of Dwellings, Apartments and Public Buildings, etc. The very latest and most approved methods in all branches of Sanitary Installation are given.

¶ Many of the subjects treated in the text and illustrated follow in the next column.

MUNN & COMPANY, *Publishers*
SCIENTIFIC AMERICAN OFFICE, 361 BROADWAY, NEW YORK

SOME OF THE SUBJECTS TREATED

Connections, sizes and all working data for all Plumbing Fixtures and Groups of Fixtures
Traps — Venting
Connecting and Supporting of Soil Pipe
House Trap and Fresh-Air Inlet
Floor and Yard Drains, etc.
Rain Leaders
Sub-soil Drainage
Floor Connections
Roof Connections
Local Venting
Bath Room Connections [etc.
Automatic Flushing for Factories, School Houses,
Use of Flushing Valves
Modern Fixtures for Public Toilet Rooms
Durham System
Plumbing Construction without use of Lead
Automatic Sewage Lift — Sump Tank
Disposal of Sewage of Underground Floors of High Buildings
Country Plumbing
Cesspools
The Electrolysis of Underground Pipes
Septic Tanks and Sewage Siphons
Pneumatic Water Supply, Rams, etc.
Examples of Poor Practice
Roughing — Testing
Continuous Venting for all classes of Work
Circuit and Loop Venting
Use of Special Waste and Vent Fittings
Cellar Work
House Drain— House Sewer — Sewer Connections
Plumbing for Cottage House
Plumbing for Residence
Plumbing for Two-Flat House
Plumbing for Apartment Houses
Plumbing for Office Building
Plumbing for Public Toilet Rooms
Plumbing for Bath Establishment
Plumbing for Engine Houses
Plumbing for Stables
Plumbing for Factories
Plumbing for School Houses, etc. [by Electricity
Thawing of Underground Mains and Service Pipes

Cottage Designs

By far the most complete collection of plans ever brought out ⁄ Illustrated with full-page plates ⁄ ⁄

$1 each ⁄ Sold separately

No. 1. Cottage Designs
Twenty-five designs, ranging in cost from $600 to $1,500

No. 2. Low Cost Houses
Upward of twenty-five designs, costing from $750 to $2,500

No. 3. Modern Dwellings
Twenty designs, at costs ranging from $2,000 to $5,000

No. 4. Suburban Homes
Twenty selected designs, costing from about $3,000 upward

MUNN & COMPANY, PUBLISHERS
361 BROADWAY :: NEW YORK

ATLAS CONCRETE adapts itself to any style of architecture

It is the only building material that has no limitations and no disadvantages.

It is economical, durable, sanitary, fire-resisting, damp-proof, warm in winter and cool in summer.

Learn about concrete before you build; get the experience of those who have used it; study plans and costs of houses so built.

Then look into cement and particularly

ATLAS PORTLAND CEMENT

You will find that this brand is the standard; that its purity and uniform quality make it the best for concrete purposes. There is but one grade of Atlas—the best—and the same for everybody. Atlas Portland Cement costs no more than other brands. The largest order ever placed for cement was for Atlas, 4,500,000 barrels being purchased by the Government for use in building the Panama Canal.

We offer four books for your information:

"Concrete Country Residences" (delivery charges 25c.)

"Reinforced Concrete in Factory Construction" (delivery charges 10c.)

"Concrete Cottages" (sent free.)

"Concrete Construction about the Home and on the Farm" (sent free.)

If your dealer cannot supply you with Atlas, write to

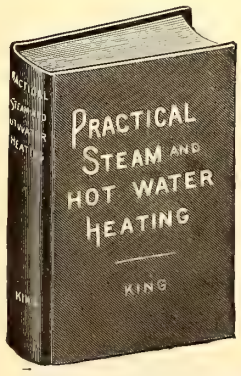
THE ATLAS PORTLAND CEMENT CO.
DEPT. 10, 30 BROAD STREET, NEW YORK

LARGEST OUTPUT OF ANY CEMENT COMPANY IN THE WORLD — OVER 40,000 BARRELS A DAY

JUST PUBLISHED

Practical Steam and Hot Water Heating and Ventilation

JUST PUBLISHED



By ALFRED G. KING

402 Pages. Containing 304 Illustrations

Price $3.00

An original and exhaustive treatise, prepared for the use of all engaged in the business of Steam, Hot Water Heating and Ventilation

THE standard and latest book published. Tells how to get heating contracts, how to install heating and ventilating apparatus. Describes all of the principal systems of steam, hot water, vacuum, vapor and vacuum-vapor heating, together with the new accellerated systems of hot water circulation, including chapters on up-to-date methods of ventilation; fan or blower system of heating and ventilation; rules and data for estimating radiation and cost, and such other tables and information as make it an indispensable work for heating contractors, journeymen steam fitters, steam fitters' apprentices, architects and builders.

This work represents the best practice of the present day and is exhaustive in text, diagrams and illustrations.

CONTAINING CHAPTERS ON I. Introduction. II. Heat. III. Evolution of Artificial Heating Apparatus. IV. Boiler Surface and Settings. V. The Chimney Flue. VI. Pipe and Fittings. VII. Valves, Various Kinds. VIII. Forms of Radiating Surfaces. IX. Locating of Radiating Surfaces. X. Estimating Radiation. XI. Steam-Heating Apparatus. XII. Exhaust-Steam Heating. XIII. Hot-Water Heating. XIV Pressure Systems of Hot-Water Work. XV. Hot-Water Appliances. XVI. Greenhouse Heating. XVII. Vacuum Vapor and Vacuum Exhaust Heating. XVIII. Miscellaneous Heating. XIX. Radiator and Pipe Connections. XX. Ventilation. XXI. Mechanical Ventilation and Hot-Blast Heating. XXII. Steam Appliances XXIII. District Heating. XXIV. Pipe and Boiler Covering. XXV. Temperature Regulation and Heat Control. XXVI. Business Methods. XXVII. Miscellaneous. XXVIII. Rules, Tables and Useful Information.

Valuable Data and Tables Used for Estimating, Installing and Testing of Steam and Hot-Water and Ventilating Apparatus are Given

MUNN & COMPANY, PUBLISHERS, 361 BROADWAY, NEW YORK CITY

American Homes and Gardens *and* Scientific American will be sent to one address for **$5.00**

Regular Price, $6.00

The materials for a picturesque garden always exist if one can but see them.

Our cedars, pitch pines, junipers, and, in fact, all the evergreens which are not too large are Japanesque in character and more suitable for this climate than anything brought from Japan.

We have the same irises to plant about the water, and the same grasses, and we can grow some of the reeds.

If the beauties of our own shrubs are not enough we can use almost all those of Japan, because our flora is similar, and most Japanese shrubs, except the evergreens, are hardy in New York.

The Japanese habit of naming things might well be adopted, though in a less fanciful way. Names makes conversation easier and give a certain imaginative value to the things named, thus Spring Garden, Rose Garden, Garden of Sweet Herbs, Alpine Garden, are all perfectly intelligible and mean much.

Philebe's Berg, Pandora Lawn, Carasaljo Lake, Myrtle Bank, Rhoda Dale, applied to different parts of the estate, are not so obvious, but are perfectly good names, and are much easier than a descriptive title like this: "The hill on the north side of the upper pasture," or "The grass plot near the brook just before you come to the bars."

WATER LILIES

A correspondent, in New Jersey, asks if water lilies can be grown in pots or tubs, and if the results warrant the trouble.

It is very easy to grow water lilies in tubs—a whiskey barrel sawed in half is the best thing. These can be painted and set on the terrace or sunk in the ground. They should be filled to within four inches of the top with good soil well mixed with old manure. The lily root is then planted with a stone to hold it down, and the whole is covered with an inch of clean sharp sand. This keeps the dirt in the earth from floating to the top when the tub is filled with water.

The lotus is perhaps nicer for tubs than the water lilies, because their leaves and flowers rise so high from the water, and it is just as easy to grow.

A few tadpoles in the water will be essential to keep the mosquitoes from growing too fast.

The following are good varieties:
Nymphea odorata minor.
Nymphea pygmea.
Nymphea pygmea helvolva.
Nymphea Marliacea chromatella.
Nelumbium speciosum.

A stone jar or an earthenware pot will do as well as a wooden tub, if it is as large. The larger the water surface the better the plants will grow, but they need little depth of water.

HORTICULTURAL HOBBIES

"I have just moved to the country for my health, and I want to have a garden, but I don't know just how to go about it. Most of the gardens I have seen are too elaborate and too full of a variety of plants. They look crowded and messy to me.

"Some flowers I like, but there are many that I do not care for and should not enjoy seeing. Would it be nice to have a garden of one, or, at most, three kinds of flowers? I am fond of irises and chrysanthemums."—F. C.

Your idea is an excellent one and your garden of iris and chrysanthemum will be interesting and satisfactory throughout the year. If you include the many daisies, which are really chrysanthemums and bloom in the summer, your garden will have some flowers for a long season.

The iris family is a large one of about 170

The bride's wise choice

"From our new cottage home
"I shall omit the useless in-
"ner doors, mantels, extra
"chimneys, fancy lamps that
"are never lighted, books
"which are never read, vases
"which contain no flowers, etc. Let us
"first purchase an outfit of

AMERICAN RADIATORS & IDEAL BOILERS

"because they save much coal, need no repairs, keep all ashes, smoke, "and soot out of the living-rooms, are safe, and will last as long as "the cottage shall stand. These savings and economies will help in "time to pay for the finer furnishings."

"The cottage will be kept cozily warm all over, and the family health thus "protected. If we prosper and move to a larger house, we will get our full "money back, or 10% to 15% higher rental to cover cost, as IDEAL Boilers "and AMERICAN Radiators do not rust out or wear out."

Those who know that happiness depends so much upon the comfort and healthfulness of the home, whether newly-weds or longweds, are urged to write us at once.

A No. 3-22 IDEAL Boiler and 600 ft. of 38-in. AMERICAN Radiators, costing the owner $245, were used to Hot-Water heat this cottage.

A No. 22 IDEAL Boiler and 240 ft. of 38-in. AMERICAN Radiators, costing the owner $110, were used to Hot-Water heat this cottage.

At these prices the goods can be bought of any reputable, competent Fitter. This did not include cost of labor, pipe, valves, freight, etc., which installation is extra and varies according to climatic and other conditions.

Our outfits are as quickly put into OLD buildings as in new—farm or city—and this is just the season to get the services of the most skillful Fitters. *Prices are now most favorable.*

IDEAL Water Boiler

Showrooms in all large cities

AMERICAN RADIATOR COMPANY

Write Dept. 6 CHICAGO

Don't Injure Your Hair with Old-Fashioned Irons; Use

The "DEL" Electric Curling Iron

You can surpass the work of any skilled hair dresser who uses an old-fashioned curling iron.

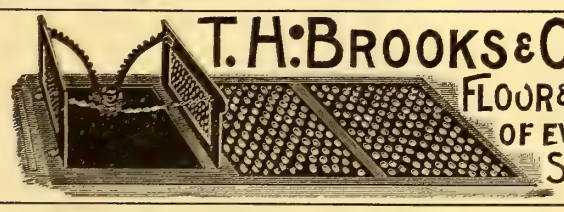
The only detachable curling iron ever invented. The "Del" has nothing to get out of order—nothing to break or bend—offers no chance to scorch the hair or burn the fingers. No soot or smoke from gas or lamp to soil the hair. No fear of making the hair coarse or brittle. The "Del" saves all these and beautifies the hair, for **its electric heat instills new life, while its highly polished surface imparts a glowing lustre.** The "Del" is easily attached to any ordinary electric light fixture, and so simple any lady can use it. It makes more **beautiful and lustrous Marcel Waves, Curls and Pompadours** than is possible with any old-fashioned curling iron and causes the hair to remain in curl for several days longer.

The "Del" is quickly heated from the inside—evenly heated from end to end at just the proper degree for hair dressing. The heat is retained to allow the iron to be detached and used in another room if desired. It never heats in spots and cannot be overheated to scorch or injure the hair like the ordinary iron. You will be surprised and delighted to find how quickly, easily and perfectly you can dress your hair in the latest fashion with the "Del."

Try the "Del" 5 Days at Our Expense

Then, if you are willing to part with it, send it back—we'll pay express both ways—and cheerfully refund your money. Price of the "Del" is $3.75, express prepaid. Send to us if your local dealer or electric station cannot supply you.

DEL SALES COMPANY, Dept. N, Monadnock Bldg. CHICAGO, ILL.



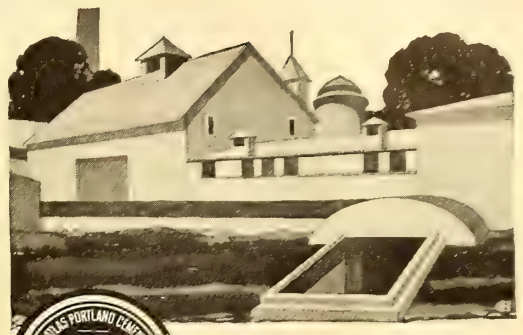
T. H. BROOKS & CO. CLEVELAND, O.

FLOOR & SIDEWALK LIGHTS. OF EVERY DESCRIPTION. SEND FOR CATALOGUE.

Dixon's Silica Graphite Paint Lasts

And the reason why it lasts is because its pigments are inert. What have inert pigments to do with it? Our Booklet 106B will tell you.

JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.



HOME JUST AS GOOD

Keeping Up the Place

Every owner of a home or farm has the expense of "upkeep" to contend with.

There are sidewalks, curbs, steps, clothes posts, horse-blocks, watering troughs, chicken coops, and the like to be built, repaired and built again later.

Why not make these improvements of concrete and settle this annual expense for all time?

Concrete is the great, modern building material, easy to handle, economical and durable as stone.

We have published a text-book devoted exclusively to this sort of work. It tells just how to make these improvements—how to mix the concrete and how to make the molds.

You can do much of the work yourself; all of it can be done under your supervision. The book is called

"Concrete Construction about the Home and on the Farm"

and will be sent to any one on request.

Concrete is a mixture of sand, gravel or broken stone and some kind of Portland Cement. The kind is important—so important that you should know about

ATLAS PORTLAND CEMENT

which, because of its purity and uniform quality, has become the standard in cements. Atlas is made in but one grade—the best—and everybody gets the same. Atlas is the brand the Government has purchased to the extent of 4,500,000 barrels for use in building the Panama Canal.

You should get Atlas for your own use and specify it for all work you have done.

Other books:

"Concrete Country Residences" (delivery charges 25c.)

"Concrete Cottages" (sent free.)

"Reinforced Concrete in Factory Construction" (delivery charges 10c.)

If your dealer cannot supply you with Atlas, write to

THE ATLAS PORTLAND CEMENT CO.
DEPT. 10, 30 BROAD STREET, NEW YORK

LARGEST OUTPUT OF ANY CEMENT COMPANY IN THE WORLD—OVER 40,000 BARRELS A DAY

You Can Save Your Trees— You Cannot Replace Them

Are they not then entitled to as much care as you devote to your house and other buildings, which you *can* replace? Trees are living things, about which cluster tender thoughts and mellow memories, and, indeed, deserve the same grateful attention you bestow on other faithful friends which serve you none the less because dumb—your dogs, your horses and your other pets.

Trees Get Sick and Are Wounded

Just as do men and animals—but they can't tell *you*, who love them, of their afflictions. If neglected, they will decay and die; if properly treated and operated upon, they will outlive you, your children and your children's children. John Davey, by many years the first, and by long odds the foremost tree surgeon, long ago proved the efficiency of proper methods in saving tree life.

JOHN DAVEY
Father of Tree Surgery

The Efficiency of Davey Methods

is graphically demonstrated by the pictures herewith. No. 1 is of a tree as our men found it, and No. 2 as they left it. No. 3 a tree three years after our treatment, and No. 4 the same tree two years later. Such results are common in our practice, but shown *only* by Davey men, trained in John Davey's methods, at the Davey School of Practical Forestry.

Have Your Trees Examined Now—

By a competent tree surgeon. They may look all right but be dying within. Our corps of trained tree surgeons is at your service and can save your trees if they are not too far gone. Send today for our handsome illustrated Booklet O, explaining the Davey methods and telling you of many pleased patrons, who enthusiastically praise our work.

For large forests and private preserves, we have associated with us the leading professional forester of America. Correspondence invited.

THE DAVEY TREE EXPERT CO.
(Operating Davey's School of Practical Forestry)

Main Office: KENT, OHIO — *"The Home of Tree Surgery"*
Eastern Office: TARRYTOWN, N. Y. — *Address nearest office*

RADFORD'S PLANS FOR HOME BUILDERS

BUNGALOWS—Our Big Book of Bungalows shows 208 designs to be built in any climate. It illustrates complete floor plans and gives the estimated cost of construction of **Radford's** latest and best designs for Bungalows. The Bungalow you want is in this book. Cloth Bound. **Price, postpaid, $1.00.**
185 E. Jackson Blvd., Chicago, Ill.

COTTAGES—This big new book of **Radford's Artistic Homes,** shows 250 modern designs for cottages with complete floor plans and estimated cost of construction. If you want to build a cottage send for this book. **Price, postpaid, $1.00.**

CEMENT HOUSES and How to Build Them—This valuable book contains 176 pages, 8x11, bound in cloth. It shows 87 fine designs with complete floor plans and estimated cost of construction of Cement, Cement Plaster and Concrete Block Houses **Price, Postpaid, $1.00.**
RADFORD ARCHITECTURAL CO., 178 Fulton St., New York.

It Don't Pay to Feed Hens That Don't Lay

We have for sale 100 pure bred yearling White Leghorn hens—**all laying to-day**—$2.00 each. Also 5 cockerels $5.00 each, or we will divide the lot to suit—Settings of 15 eggs, $2.00.

BELLE HILL WHITE LEGHORN RANGE, Elkton, Md.

FOR SALE — STAMFORD, CONN. —

Gentleman's Country Estate; 245 acres; improved property; fine stone residence with three bathrooms; steam heat; 25 other buildings, including magnificent cow stable accommodating 100 head; splendid horse stable; carriage house and garage; city water; electric light; modern plumbing; Rippowam river flows through property.

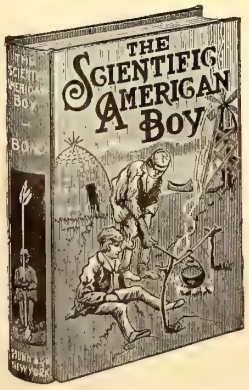
SEND FOR 26-PAGE ILLUSTRATED BOOKLET

HOPKINS & BOYD
312 Madison Avenue, NEW YORK

The Scientific American Boy

By A. RUSSELL BOND

12mo. 320 Pages. 340 Illustrations. Price, $2.00, Postpaid.



¶ This is a story of outdoor boy life, suggesting a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. In each instance complete practical instructions are given for building the various articles. ¶ The needs of the boy camper are supplied by the directions for making tramping outfits, sleeping bags and tents; also such other shelters as tree houses, straw huts, log cabins and caves. ¶ The winter diversions include instructions for making six kinds of skate sails and eight kinds of snowshoes and skis, besides ice boats, scooters, sledges, toboggans and a peculiar Swedish contrivance called a "rennwolf." ¶ Among the more instructive subjects covered are surveying, wigwagging, heliographing and bridge-building, in which six different kinds of bridges, including a simple cantilever bridge, are described.

FOR SALE AT ALL BOOKSTORES

species found throughout the Northern temperate zone. Most of them are hardy in this climate, and they grow in many situations from the sun-baked soil on top of a rock to swamps where the water stands half the year.

The majority thrive in ordinary garden soil. A few require special soils as conditions, and others grow and bloom much better if their peculiarities are respected. They vary in height from a few inches to four or five feet, and the range of color is very wide. The form is always beautiful, even if it has sometimes a little of the strangeness of an orchid.

The season of bloom lasts from the time the first *I. histrio* blooms (which is in February or March, according to the season) until the last Japanese iris has faded in July.

The following list of fifteen kinds will do to begin on:

1. I. Cristata.—A charming dwarf iris with early flowers, delicate blue. Thrives in the driest parts of the rock garden.

2. I. Histrio.—The earliest iris. Bulbous-rooted, dwarf, sweetly scented, purple.

3. I. Kaempferi.—Japanese iris. There are many varieties, double, single white, blue and purple. Needs much water in the growing season if the flowers are to be at their best.

4. I. Pumila.—Grows from 4-10 inches high. Many varieties, all good.

5. I. Reticulata.—Violet and gold flowers; almost as early as I. histrio. Prefers a situation dry in winter.

6. I. Siberica.—Slender leaves 2-3 inches high, small showy blue or white flowers. In bloom only a few days, but magnificent while it lasts.

7. I. Susiana.—Mourning iris, 1½-2 inches high, large flowers, spotted and striped with dark purple on an ashy ground. Handsomer than one would imagine from the description.

8. I. Xiphioides.—English iris, later and larger than the Spanish iris; purple, blue and white; sometimes spotted and blotched. They are very cheap and the small bulbs are easy to plant.

9. I. Xiphium.—Spanish iris. Blue and yellow, with shades of lavender and buff, also cheap and easy. The onion-like leaves of this and I. xiphioides grow in the fall and are green all winter.

10. I. Germanica.—The German iris, so-called, has many beautiful varieties: rhu chereau, white edged with blue, Queen of May, violet and heliotrope graccus.

11. I. Graminea.—Pale yellow and blue, scented like a peach.

12. I. Pseuda Coru.—The common flag.

13. I. Fulva.—Copper colored, late.

14. I. Florentina.—Pale blue, large. Furnishes the orris root of commerce.

15. I. Vesicolor.—Deep blue, native in all our swamps, but does well in the garden.

The iris are best when planted in large masses and so planted they make a gorgeous show for a long time in the spring and early summer. The lower plants like I. histrio, I. reticulata, I. pumila, etc., should, of course, be planted in the front of the bed, and the larger kinds, like I. kaempferi, at the back. The bulbous English and Spanish iris should be planted with some low carpet plant like arabis or phlox rubulata.

They may be planted at any time, but the fall is probably best. They are easy to grow and easy to handle in the garden. The only trouble is that some kinds grow too well and may need thinning after a few years. Their foliage is never too shabby and looks its best when it is seen alone and not in contrast with broad-leaved plants.

The chrysanthemum portion of the garden will be treated in a later number.

Unburnable Homes

We Build Them and We Build Nothing Else

Reinforced Concrete throughout, or exterior walls of brick or stone, and interior decoration and finish as desired. But the

Reinforced Concrete Interior Structure

is the *sine qua non*

Real Reinforced Concrete (Portland cement, sand and stone, reinforced with steel rods) is economical, unburnable, rust and decay proof—but requires for successful use good materials, good structural design, good workmanship and experience. Send for pamphlet descriptive of work we have built, and let us consult with your architect.

BENJAMIN A. HOWES, C. E.
Engineer and Contractor
1193 BROADWAY NEW YORK CITY

"You choose the colors— **Thread & Thrum Rugs** *we'll make the rug."*

Thread and Thrum RUGS
Different from all other rugs, made in colorings to match your decorations. Special styles to go with Mission or Fumed Oak Furniture. Wool weft, seamless, heavy, reversible and durable. All sizes up to 12 feet wide and any length. Sold by best shops in principal cities. If your dealer does not keep them, write Arnold, Constable & Co., New York, for Color Line and Price List.
THREAD AND THRUM WORKSHOP,
Auburn, N. Y.

Art Stone Lawn Furniture

Will last for centuries, do not have to be taken in and stored during winter months. Do not have to be painted. Don't fail to write for photographs and prices of our Cast Stone and Cast Iron Lawn Furniture. The low prices will interest you.

SIDNEY CEMENT STONE CO., Sidney, O.

Cattle Manure in Bags *Shredded or Pulverized*

Best and safest manure for florists and greenhouse use, absolutely pure, no waste, no danger. Write for circular and prices.

The Pulverized Manure Co.
21 Union Stock Yards, Chicago.

Heat and Hot Water Anywhere Anytime
at greatest saving of time, labor and fuel, with a Wilks Self-Feeding Heater, only heater with a coal magazine that regulates itself, keeping an even fire for 10 hours.

Wilks Self-Feeding Heaters
for farm buildings, green-houses, brooders, poultry houses, bowling alleys, etc., have been on the market successfully for over 50 years. Made of best steel, no sections to crack, no bolts to loosen, no leaks to fear. Tested to 100 pounds pressure.
Write for FREE BOOK showing sizes, prices, etc. We will tell you the best heater for your purpose if you give full particulars; satisfaction guaranteed.
S. WILKS MFG. CO 3524 Shields Av. CHICAGO.

WATER SUPPLY For Country Houses
The Problem Solved
No elevated tank to freeze or leak. Tank located in cellar. Any pressure up to 60 lbs.
The Ideal Fire Protection
Send for Illustrated Catalog 48
Let our Engineers figure out your needs
LUNT MOSS COMPANY
Boston, Mass. Branch: 50 Church St., New York

MAKING A COUNTRY HOME

(*Continued from page vii*)

about two quarts to four quarts per bush. White Imperial is the sweetest of all currants, and is a good grower. White grape is, all in all, one of the finest varieties ever produced. The berry is sweet, large, and the crop averages four to five quarts per bush. This exceeds all other varieties in quantity and quality, except my own Giant Red, which stands six feet high and strong, and yields five to six quarts per bush. These two last named varieties are about all that one can ask for. The size of each is a trifle under Fay, because the croppage is so very large. Spray with kerosene emulsion and Bordeaux very soon after leaves start, early in May.

The gooseberry is growing in favor, and if you are of English stock you probably have a taste for it. We have long had two sorts in our gardens, one of which we called English and the other Irish; and with them we have had three or four natives like Downing and Houghton. Recently an English sort has been added called Industry. It is big and hairy, and of not very high quality. The very best American sort is Josselyn, hardy and prolific and big, but Carman and Portage are said to be ahead. I have not tried them. I have several seedlings that I value very highly, and shall some day place on the market. Among these is one that ripens a week earlier than all other sorts, a deep dark red, large and sweet. I have named it the Clinton. Gooseberries need a good rich soil, and considerable pruning. In some sections they mildew badly, but growing mine on high land, in rows running north and south, I have never seen a mildewed berry. Spray the gooseberry bushes when you spray the currants or a little earlier, to destroy the saw fly larva.

I have given you the experience of over half a century of small fruit growing. I have tested nearly everything that has been sent out, but I do not have the slightest idea that something better is not coming. We are just at the threshold of evolution. If you should ever develop your garden work for market purposes, you will find that small fruit growing is immensely profitable. Combining large fruits and small fruits I am able from a little over four acres to take an income of nearly two thousand dollars per year. In such a place the barn should stand very near the center, and the barn cellars should include a thoroughly good and well ventilated fruit cellar. My property has become a bird paradise, and we have here robins, bluebirds, indigo birds, tanagers, song sparrows, grosbeaks, catbirds, kingbirds, and almost everything but English sparrows. These we drive out at their first showing, and the birds combine to help us. We also kill every red squirrel, because they destroy young birds, and immense quantities of fruit. When crows appear they are chased by the kingbirds. We and the birds own the place together, and shut up all cats during the bird season. I mention this because you will find your success in fruit growing depends upon making a proper alliance with the birds. Bees also you must keep, if not more than a dozen hives. From that number of hives you can take up five hundred pounds of honey per year; meanwhile the bees will pollenize those fruits which need their help. Your hens must be kept within bounds with netting, but they must have good range.

Hens eat very few currants, but they will make way with strawberries very rapidly, and, what seems very queer, is that they will eat gooseberries almost as soon as they are out of blossom. They are ravenously fond of them, and if admitted to the garden will entirely strip the bushes. But hens are so valuable as

All Portland Cement is not ATLAS

What do you care? Just this: Concrete is made with Portland Cement. Concrete is a fire-resisting, durable, adaptable, economical building material. It is a material that all who know and understand it are using for all building purposes. It is the material you will come to use, and

its success as a building material depends upon the quality of cement that goes into it.

That is why you should know that all Portland Cements are not Atlas and why you should also know that among Portland Cements Atlas is the standard, because it is made by a process that insures purity and absolutely uniform quality.

ATLAS PORTLAND CEMENT

is made in but one grade—the best—and the same for everybody. It costs no more than other cements, yet it is the brand by which the others are measured, the brand the Government has purchased to the extent of 4,500,000 barrels for use in building the Panama Canal.

You should study this subject of concrete and cement. We have some books that will interest you. They are:

"Concrete Country Residences" (delivery charges 25 cents).
"Reinforced Concrete in Factory Construction" (delivery charges 10 cents).
"Concrete Cottages" (sent free).
"Concrete Construction about the Home and on the Farm" (sent free).

If your dealer cannot supply you with Atlas, write to

THE ATLAS PORTLAND CEMENT CO.
DEPT. 10, 30 BROAD STREET, NEW YORK

LARGEST OUTPUT OF ANY CEMENT COMPANY IN THE WORLD — OVER 40,000 BARRELS A DAY

bug eaters that we can not dispense with them altogether. I admit them to the general garden as soon as the gooseberries and strawberries are picked. Before that they have a large run that includes the plum yard and a portion of the lawns that need to be watched against slugs, crickets and grasshoppers. Birds, however, are more valuable to a fruit grower than even hens. They must be fed, and their music alone deserves a salary in cherries and berries. With the provisions I have described elsewhere in the way of wild fruits, I leave uncovered some of my cherry trees, and expect them to take their share of the berries and currants. It is, however, quite a problem for a very small place, if there are no neighbors who also grow fruit. Our policy is to secure the planting of bird-loved fruits as abundantly as possible. It is a good thing to plant them in the streets, and it is also a good thing to secure the planting of as many basswoods as possible in the streets and elsewhere to feed the bees.

RICH WARM TONES

RESULT FROM THE USE OF WOOD DYES FOR FINISHING TRIM AND FURNITURE

WHO nowadays trusts to the shiny obtrusiveness of varnish for the note of beauty in wood trim and furniture in the home—or anywhere, for the matter of that?

Wherever you see the natural beauty of the wood marred by the use of unnatural—I had almost said impossible—attempts at finishing with varnish stains, be sure the hand of the amateur, or worse, the hand of the perverter of Nature, has been at work.

The true lover of the beautiful recognizes the *responsive* quality of beautiful wood. It has so much beauty to give, and under the treatment of one who knows, it readily yields its best and its all.

How many times have you rebelled at the sight of a perfectly grained piece of wood entirely robbed of its beauty by some fruitless attempt at decoration? Smears of varnish and splotches of stain—like clothing a beautiful form in ill-fitting garments and inharmonious colors.

On the other hand, one who sees the possibilities of the wood, and sets himself intelligently to the task of developing it, is rewarded with results that are nothing short of marvelous in their artistic value.

Who wants slippery looking pieces about the house to repel all friendly advances lest they get scratched and spoil their glossy surfaces? Not the real home-maker whose heart is bent upon the enjoyment of his home and upon extending its hospitality.

He strives rather to obtain rich, subdued warmth of coloring which softens the lights into a dreamy glow—which invites to an intimate friendliness—which gives promise of mellow tones under the wear of every-day contact—and which conveys the impression of beautiful usefulness.

But like everything else worth while, this effect is not a thing to be picked up haphazard in the shops—nor to be had through the effects of the first painter who appears with his sample color card.

Only those who have attempted and failed again and again in accomplishing satisfactory results with wood finishes know the difficulties encountered.

And only those who have used wood dyes of the right sort and proved their effectiveness know how simple it is after all—when you know how.

Wood, in its natural state, has a beauty of its own which puts to shame the little attempts of artificial means. Wood dyes find their mission in supplementing and preserving this natural beauty. In developing it to a degree absolutely beyond the reach of the common application in use by the unknowing.

Study the character of your wood, as you would study the artistic framing of a picture. Select your wood dye in some one of the soft tones which harmonize with your general color scheme for the room to be furnished. Use it according to the instructions which accompany the package, and you can not fail to be heartily satisfied with the result.

Polish? O, yes, indeed, it can be polished. True, it won't shine like the golden oak dining-table in the instalment-house window, but it will have a velvet sheen which suggests the rich, soft glow of a mellow old age rather than anything artificial.

A CRAFTSMAN HOUSE FROM CORNERSTONE TO CHIMNEY-POT CURIOUSLY SUGGESTS THE CHARACTER OF ITS UNIQUE INTERIOR
BUILDERS AND CRAFTSMEN COMPANY
38 WEST 32ND STREET NEW YORK
INVESTIGATE OUR BUILDING METHOD

Don't Be Knocked Over
By Stenches from Backyard Debris

Why not look up the Stephenson Method, 7 years on the market, and if satisfied, protect the health of your family by installing

The Stephenson Underground Garbage Receiver

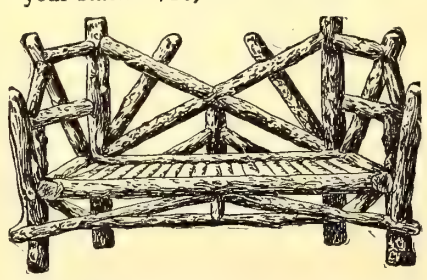
which removes all objections of the old swill-tub.
The Stephenson UNDERGROUND REFUSE RECEIVER for Ashes, etc.
The Stephenson UNDERGROUND EARTH CLOSET for Camps.
The Stephenson PORTABLE METAL HOUSE for Above.
The Stephenson SPIRAL RIBBED ASH BARREL—Outwears two.

SOLD DIRECT Send for Circulars on each

C. H. STEPHENSON, Mfr.
21 Farrar Street LYNN, MASS.

Established 1875
"Rustic Work" WHICH GIVES THAT ARTISTIC FINISH TO COUNTRY ESTATES

This beautiful Rustic Settee, delivered to your station **$10,** will last a lifetime.



Rustic Tea Houses, Boat and Bath Houses, Arbors, Pergolas, Back Stops for Tennis Courts, Rustic Bridges for Ravines, Entrance Gates, in fact Rustic Work of every description.

Give the Birds A Home

Rustic Bird Houses

One Room, $2.00
Two Rooms, $3.00

Send for catalogue and sketches or have our representative call upon you.

RUSTIC CONSTRUCTION WORKS, 33 Fulton St., New York
H. I. PINCKNEY, Manager

NEW BOOKS

BUILDING CONSTRUCTION AND SUPERINTENDENCE. By F. E. Kidder, C. E., Ph.D., Architect, Fellow of the American Institute of Architects; author of "Architects' and Builders' Pocketbook." Revised and enlarged by Thos. Nolan, M.S., A.M., Fellow of the American Institute of Architects, Assistant Professor of Architecture, University of Pennsylvania. Part 1, ninth edition, revised, Mason's Work. 628 illustrations. Pp. 985. One 8vo volume. Cloth. Price, $6. New York: William T. Comstock.

The first edition of this work was brought out in 1896, and had 421 pages and 260 illustrations, and since then, as the different editions have been issued, slight revisions have been made and occasional pages interpolated, but meanwhile the art of masonry has advanced so that it was necessary to reconstruct the whole work.

The work when first issued was the most complete representation of masonry that had up to then appeared, and the present edition in like manner represents the latest and best modern practice, and all the new ideas and their application as developed up to this time.

The work bears evidence of the time, labor, thought and persistent effort that has been put forth to collate, arrange and properly classify all the data that belongs to the latest and modern accepted practices.

The chapter on "Concrete and Reinforced Concrete Construction" is entirely new, and contains much more detailed information than many books on the subject. The chapter on "Fireproofing" is substantially new, and has over 200 illustrations. Even in the old stand-by brick great changes have taken place, sand-lime brick being a new building material since Mr. Kidder's day. The chapter on "Specifications" shows many and important changes, such as those on cement and concrete construction, where new specifications are given.

For more than a year past Professor Nolan, who undertook the work for Mr. Kidder, has devoted his entire time, outside of college duties, to gathering the material and putting the work in shape for publication, and as a result we have before us the most complete encyclopedia of masonry that has ever been offered to the American architect and builder.

When Ben Franklin published the Saturday Evening Post in 1728, he was the whole shop from editor-in-chief to printer's devil.

Everywhere things are more "specialized" now-a-days—in painting as well as in publishing.

The progressive master painter *can* mix paints—but doesn't. He prefers Lowe Brothers "High Standard" Paint—machine made.

The oil and pigments are blended with a thoroughness impossible to secure in the laborious hand mixing—even when the painter has had 40 years of experience—which is what Lowe Brothers have had.

Besides, every can of "High Standard" Paint is uniform, because machinery is precise. The hand never mixes twice alike.

Then "High Standard" Paint is ready for the brush. Hand mixed paints must be thinned and thickened, tested and tried—which means extra hours for you to pay for without any actual service rendered—all saved by using "High Standard"—and you get a paint that flows on easily, covers 100 to 150 square feet per gallon more than ordinary paints, dries readily with a rich permanent lustre and leaves a smooth surface for re-painting when necessary.

The "Little Blue Flag" insures Quality, Economy and Satisfaction all around. "Little Blue Flag" Varnishes and Household Finishes for interior are just as sure to satisfy.

Ask for color cards and combinations.

The Lowe Brothers Company

450-456 E. Third Street, Dayton, Ohio.

New York **Chicago** **Kansas City**

FLOORS

ROOFS

A concrete tank erected on estate of Edmund Tatham, Katonah, New York

Frederick J. Sterner, Architect - - New York
De Lancey A. Cameron, Builder - - New York

Tank designed for storage supply of 15,000 gallons, built entirely of concrete reinforced with Clinton welded wire. Before roof was placed over tank, and during winter months, ice 10 inches thick formed on water stored therein. No cracks or leakage have developed.

Clinton Wire Cloth Company
CLINTON, MASS.

Ceilings

Partitions

Fireproofing Departments:
ALBERT OLIVER, 1 MADISON AVE., NEW YORK

WASHINGTON: Rosslyn Supply Co., Colorado Building
CHICAGO: Clinton Wire Cloth Co., 30-32 River Street
BUFFALO, N. Y.: Buffalo Wire Works Co., Inc.
CLEVELAND, OHIO: Carl Horix, 428 Garfield Building
ST. LOUIS: Hunkins-Willis Lime & Cement Co.
SAN FRANCISCO: L. A. Norris, 835 Monadnock Bldg.
SEATTLE: L. A. Norris, 909 Alaska Building
SYRACUSE, N. Y.: National Construction Company

Here's Real Comfort!

Most beautiful and durable hammock ever made. Can be used indoors as well as outdoors. Easily kept clean—cannot be damaged by rain.

Fresh Air is the Great Tonic!

Improve your health by sleeping outdoors in a

"Glencoe Hammock"

$11—ONLY—$11

Made in three colors—white, khaki and drab. Furnished with hooks, ropes, and tufted sea-moss mattress. Length, 6 feet 4 inches; width, 2 feet 6 inches.

We pay freight and save you money.

Just tell us what color you want. Send us Eleven Dollars and we will ship you a hammock complete, prepaid. Money refunded if not satisfactory. Send for descriptive circular.

J. A. Woodford & Co.

357 Marine Building, Chicago, Ill.

MENNEN'S
BORATED TALCUM
TOILET POWDER

"BABY'S BEST FRIEND"

and Mamma's greatest comfort. **Mennen's relieves** and **prevents Prickly Heat, Chafing and Sunburn.** For your **protection** the **genuine** is put up in **non-refillable** boxes—the **"Box that Lox,"** with **Mennen's** face on top. Sold everywhere or by mail, 25c.—**Sample Free.** Guaranteed by the Gerhard Mennen's Chemical Co., under the Food and Drugs Act, June 30, 1906. Serial No. 1542.

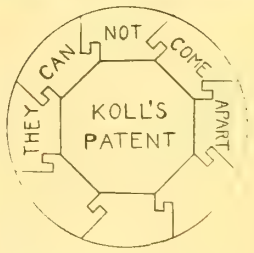
Try **Mennen's** Violet (Borated) Talcum Toilet Powder—It has the scent of Fresh-cut Parma Violets. **Sample Free**

GERHARD MENNEN CO., Newark, N. J.

Mennen's Borated Skin Soap [blue wrapper] { *No Samples*
Specially prepared for the nursery.

Mennen's Sen Yang Toilet Powder, Oriental Odor—Sold only at Stores

Koll's Patent Lock-Joint Columns



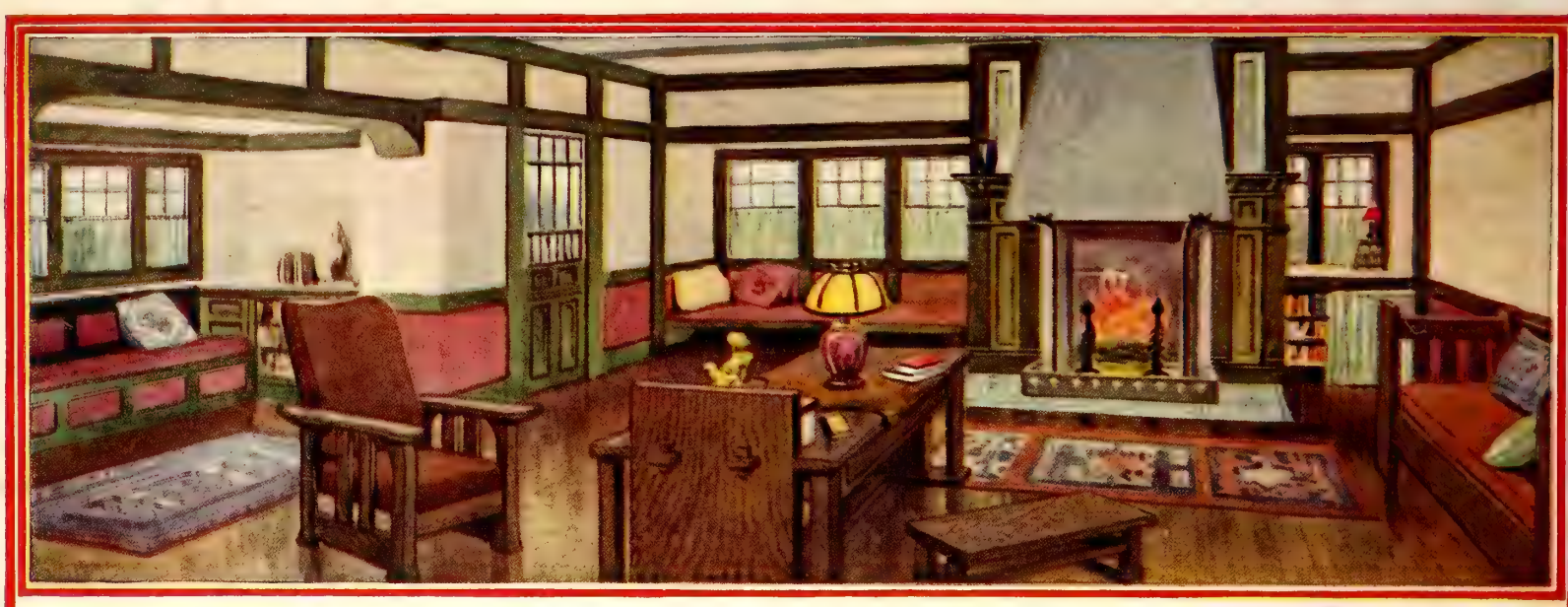
The Best for Pergolas, Porches or Interior Use are made exclusively by

Hartmann - Sanders Company

Elston and Webster Avenues
CHICAGO, ILL.

Eastern Office, 1123 Broadway
NEW YORK

Send for Catalogue A-19 of Columns, or A-29 of Sun-dials, Pedestals, etc. (See also "Sweet's Index.")



How to Secure the Richest and Most Durable Effects in Wood Finishing

There is but one way.

The method is simple, for as a result of some twenty-five years' study on this one object alone it has become an exact science.

If you wish to finish or refinish woodwork you can do it yourself, or—

If you are building or re-building you can have your architect specify the material which you and he can be certain will produce the most satisfactory results.

JOHNSON'S ARTISTIC WOOD FINISHES

are the never-failing solution of the wood finishing problem.

Johnson's Wood Dye (14 shades) is really *dye*—not merely surface "stain" or lacquer—not varnish stain, which attempts a stain and finish in combination—and hides all the beauty of the wood.

Johnson's Wood Dye penetrates and dyes the wood to the desired shade, accentuating its natural beauty by bringing out the grain—it is thin and easily applied—cannot lap or streak.

Johnson's Prepared Wax (Natural or Black) does not scratch off like varnish—does not mar.

Johnson's Prepared Wax applied over Johnson's Wood Dye produces the rich, subdued, artistic finish.

Johnson's Under-Lac should be used over the Dye with Johnson's Prepared Wax as a final coat if a higher gloss is desired.

Johnson's Wood Dye in the following shades is for sale in convenient packages by paint dealers everywhere.

No. 126 Light Oak	*No. 130 Weathered Oak*
No. 123 Dark Oak	*No. 131 Brown Weathered Oak*
No. 125 Mission Oak	*No. 132 Green Weathered Oak*
No. 140 Manilla Oak	*No. 121 Moss Green*
No. 110 Bog Oak	*No. 122 Forest Green*
No. 128 Light Mahogany	*No. 172 Flemish Oak*
No. 129 Dark Mahogany	*No. 178 Brown Flemish Oak*

Half-pints 30c; pints 50c. Johnson's Prepared Wax 10c and 15c packages. Also sold in large sizes. For sale by all leading paint dealers. Samples and

Handsome Artistic Home Beautifying Book Free

Illustrated in full colors (48 pages).

PLEASE USE THIS FREE COUPON

S. C. Johnson & Son, Racine, Wis.

I accept your offer of Free Booklet Edition AH6, sample of Johnson's Wood Dye, shade No..... and samples of Johnson's Under-Lac and Prepared Wax Black.

Name.....

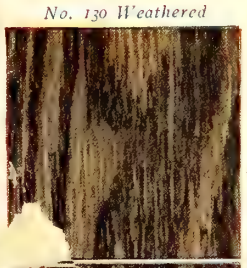
Address.....

I usually buy my paint at store of

Name.....

Address.....

No. 130 Weathered



No. 131 Brown Weathered

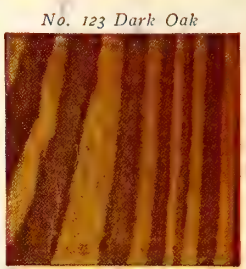
(Plain Sawed Oak.)

No. 110 Bog Oak

No. 140 Manilla Oak

(Quarter Sawed Oak)

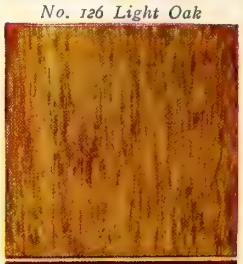
No. 123 Dark Oak



No. 121 Moss Green

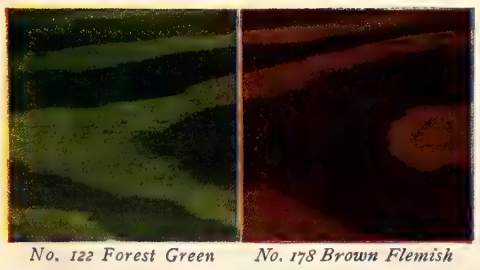
(Southern Pine)

No. 126 Light Oak



No. 129 Dark Mahogany

(Birch)



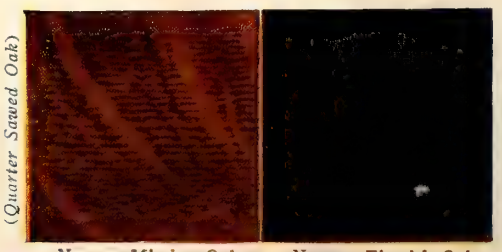
No. 122 Forest Green *No. 178 Brown Flemish*

(Southern Pine)

S. C. Johnson & Son

"The Wood Finishing Authorities"

Racine, Wisconsin



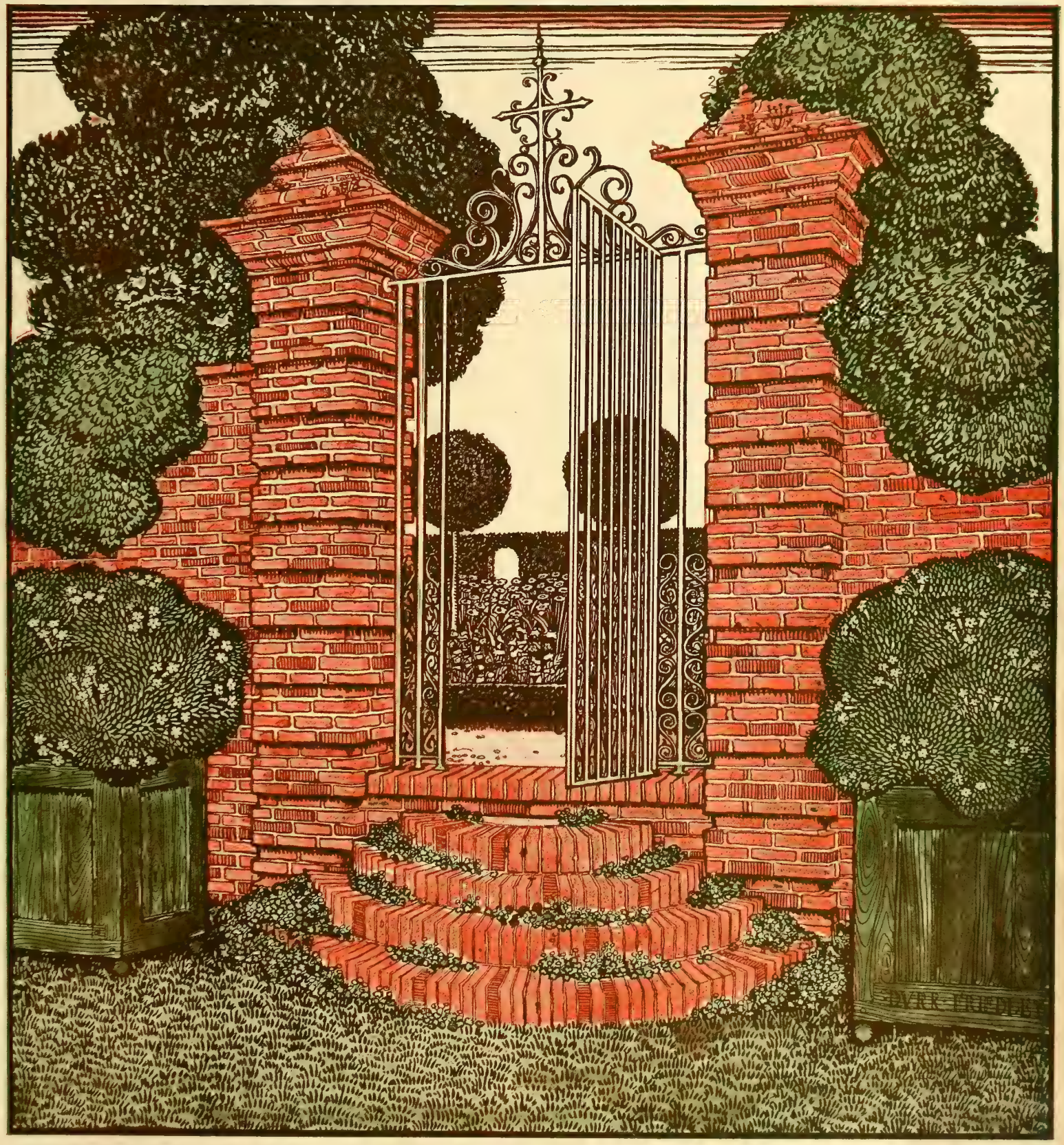
No. 125 Mission Oak *No. 172 Flemish Oak*

(Quarter Sawed Oak)

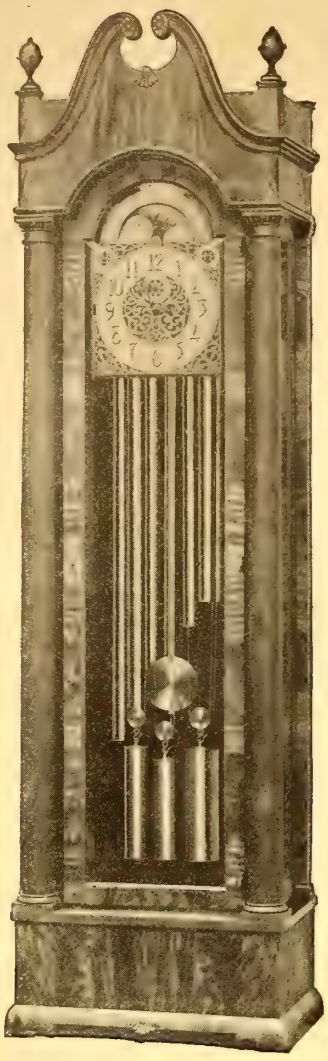
NA
7100
A512
Hort.

Vol. VI JULY, 1909 No. 7

AMERICAN HOMES and GARDENS



$3.00 A YEAR MUNN & COMPANY, Publishers PRICE, 25 CENTS



HALL CLOCKS

Our line comprises the finest and most complete designs of high-class clocks on the market. Our movements are superior in nearly every detail and the purchaser is assured that he can buy the best by ordering a "Waltham."

We will soon have ready for delivery, our new Chiming Movement which chimes either Westminster, Whittington or St. Michaels.

Our "Willard" or Banjo Clock is a model of perfection and appeals to those who desire a first-class article in every respect.

If your local dealer does not sell our line, send direct for illustrated catalogue.

Waltham Clock Company
Waltham, Mass.

Many Uses of a Conservatory

Not only is your conservatory a flower garden, connected with your house and serving you the year round, but it may be a living-room, where the morning sun-bath is enjoyed, or the afternoon tea delightfully served. It adds another unique, attractive room to your home, one from which all the family will get great satisfaction and comfort. Consult us about its construction.

Hitchings & Company

Designing and Sales Offices
1170 BROADWAY, NEW YORK

General Offices and Factory
ELIZABETH, N. J.

Is Your House a Part of the Landscape?

Many buildings are not. Faced with smooth, high-colored bricks they clash with Nature's quiet greens and deep-toned browns.

Tapestry Brick
REG U.S. PAT. OFF.

alone have the soft, rich shadings which harmonize with any landscape, with indian reds, ivory grays, quiet olives and golden browns, all with rough texture, they bring "that weathered effect" *out where the weather is* and have that honest, rugged appearance which distinguishes "natural finishes" from artificiality.

FAR THE CHEAPEST IN THE END

Tapestry Brick save repair bills, assure walls that Time will beautify rather than blemish and add materially to the salability of your entire property.

The ideal material for Country Houses, Garden Walls, Terraces, Brick Pergolas and other appurtenances of the formal garden.

Full information free. Send 20c for elaborate book, "Tapestry Brickwork."

FISKE & COMPANY, INC.
1662 Flatiron Building, New York

PATENTS

THE WEALTH OF NATIONS

A PATENT gives you an exclusive right to your invention for a term of seventeen years. You can sell, lease, mortgage it, assign portions of it, and grant licenses to manufacture under it. Our Patent system is responsible for much of our industrial progress and our success in competing in the markets of the world. The value of a successful Patent is in no degree commensurate with the almost nominal cost of obtaining it. In order to obtain a Patent it is necessary to employ a Patent Attorney to prepare the specifications and draw the claims. This is a special branch of the legal profession which can only be conducted successfully by experts. For nearly sixty years we have acted as solicitors for thousands of clients in all parts of the world. Our vast experience enables us to prepare and prosecute Patent cases and Trade Marks at a minimum of expense. Our work is of one quality and the rates are the same to rich and poor. Our unbiased opinion freely given. We are happy to consult with you in person or by letter as to the probable patentability of your invention.

Hand Book on Patents, Trade Marks, etc., Sent Free on Application.

Branch Office:
625 F Street
Washington, D. C.

MUNN & COMPANY

Solicitors of Patents
Main Office: 361 BROADWAY, NEW YORK

SMITHSONIAN
AUG 12 1985
LIBRARIES

THE GREATER WANAMAKER'S

(Enlarged and Specialized)

Women's Store
Jewelry Store
Housewares Store

Wanamaker Galleries—
Furnishing and Decoration
Pianoforte Salons

Men's Store
Book Store
Sporting-Goods Store

The New Wanamaker "GUIDE BOOK"

IS READY AND WILL BE SENT —WITHOUT CHARGE—TO THE

Home-Lovers of America and the World

THIS daintily illustrated, forty-eight page "GUIDE BOOK," brings the story of the great Wanamaker Stores—and Galleries of Furnishing and Decoration, DIRECT TO YOUR LIBRARY TABLE.

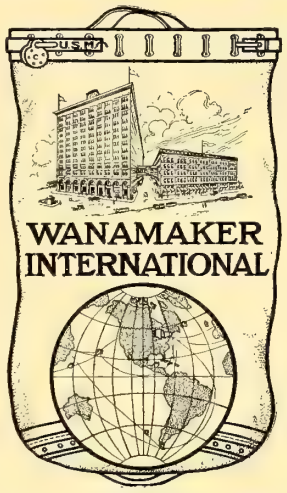
The "GUIDE BOOK" tells about the celebrated "House Palatial," a quarter million dollar Funishing-Arts Exhibit (built into the Galleries) and other unique Wanamaker attractions, that are viewed by thousands every day.

The "GUIDE BOOK" introduces our catalogues and folios and samples, which, in turn, illustrate our newest patterns in every category of Antique and Modern Furniture, Oriental Rugs, Carpets, Draperies, Laces, Upholstery Stuffs, Tablewares, Fancy Chinas, Cut Glass, Art Lamps, the famous Wanamaker Hygienic Bedding and other distinctive—though moderate priced--Furnishings, that the women of New York and vicinity, revel in The "GUIDE BOOK" also tells interesting things about the Wanamaker Paris, London and New York fashions, in Men's and Women's Wearing Apparel.

The "GUIDE BOOK" tells about our specialized correspondence and Mail-Order Service. It tells how our expert designers and decorators will send you color-schemes, suggestions and pictures of Furniture, with prices, for the room or the complete house, without charge for this service—which enables you to be served as thoroughly and profitably AS THOUGH WE WERE WAITING ON YOU AT THE STORE.

Every woman who is interested in the Home-Making Arts and the Home Beautiful, is invited to send rough sketch or blue-print, telling us what furnishing is contemplated and these suggestions, pictures and samples will go forward.

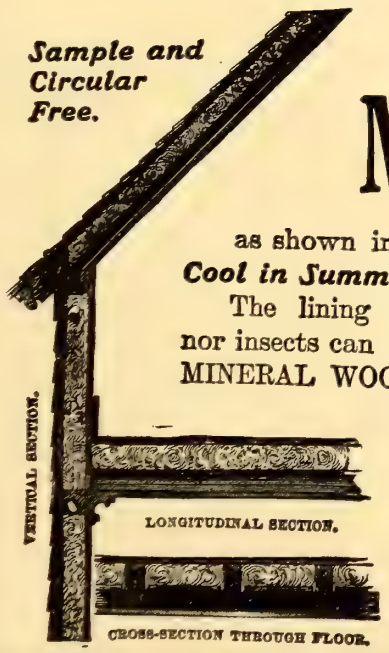
In writing for the "GUIDE BOOK" and in other correspondence, address: JOHN WANAMAKER, Section B, NEW YORK. The "GUIDE BOOK" will be sent free—postpaid.



A ROUND THE WORLD SERVICE

JOHN WANAMAKER

Philadelphia NEW YORK Paris



Sample and Circular Free.

A House Lined with Mineral Wool

as shown in these sections, is ***Warm in Winter, Cool in Summer,*** and is thoroughly DEAFENED.

The lining is vermin-proof; neither rats, mice, nor insects can make their way through or live in it. MINERAL WOOL checks the spread of fire and keeps out dampness.

Correspondence Solicited.

U. S. Mineral Wool Co.

140 Cedar St., NEW YORK CITY.

THE ENOS COMPANY announce the removal of their Salesrooms tc No. 36 West 37th Street, where may be found a complete exhibition of the best forms of lighting fixtures.

The ENOS COMPANY Makers of Lighting Fixtures

NEW YORK

Office and Factory: 7th Av. and 16th St. Salesrooms: 36 West 37th St.

Boston: H. F. Esterbrook, Inc., 9 Park Street
Baltimore: 519 North Charles St.
Pittsburg: G. P. Norton, Century Building
St. Louis: N. O. Nelson Mfg. Co.
Portland, Ore.: J. C. English Co., 128 Park St.
Chicago: W. K. Cowan & Co., 203 Michigan Blvd.
San Francisco: 1748 California St.
Toronto: 94 King St. West
Spokane: Cutter & Plummer, Inc.
Seattle: Cox & Gleason, 1914 Second Ave.

ANDREWS, JACQUES & RANTOUL, Architects, Boston

DEXTER BROTHERS'

English Shingle Stains

produce soft even shades in Moss Greens, Tile Reds and beautiful Silver Grays.

PETRIFAX

Damp-Resisting

INTERIOR and EXTERIOR COATING FOR BRICK, CONCRETE or CEMENT

"If the coat fits, put it on"

DEXTER BROTHERS COMPANY

103-105-107 Broad Street, BOSTON

AGENTS: H. M. Hooker Co., 128 W. Washington St., Chicago; W. S. Hueston, 6 E. 30th St., New York; John D.S.Potts, 218 Race St., Philadelphia; W. W. Lawrence & Co., Pittsburg, Pa.; F. H. McDonald, 619 The Gilbert, Grand Rapids, Mich.; F. T. Crowe & Co., Seattle, Spokane, Tacoma, Wash., and Portland, Ore.; M. D. Francis, Atlanta, Ga.

Antiques

Photographs and descriptions of genuine antique pieces sent on request. List your wants of antiques with me.

RALPH WARREN BURNHAM

IPSWICH IN MASSACHUSETTS

Wall Papers and Wall Coverings *A Practical Handbook*

For Decorators, Paperhangers, Architects, Builders and House Owners, with many half-tone and other illustrations showing latest designs

By ARTHUR SEYMOUR JENNINGS

Includes characteristic designs in vogue to-day. Gives reliable information as to the choice of Wall Papers and describes the practical methods of applying them

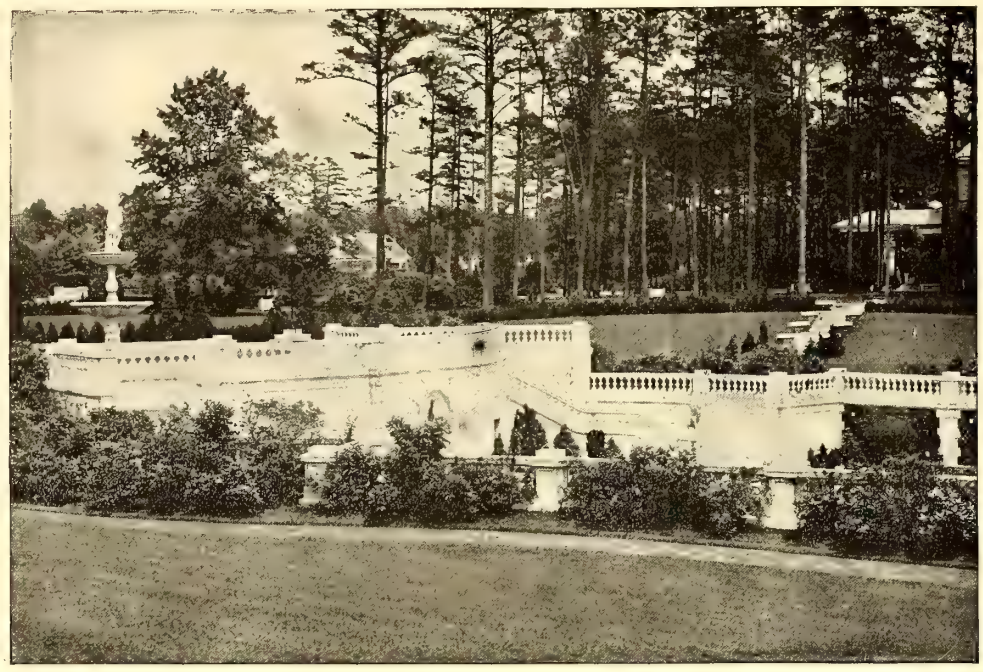
One Large 8vo Volume. Cloth. Price $2

MUNN & CO., 361 Broadway, NEW YORK

American Estates and Gardens

By BARR FERREE

Editor of "American Homes and Gardens," Corresponding Member
of the American Institute of Architects and of the
Royal Institute of British Architects



4to. 11x13½ inches. Illuminated Cover and 275 Illustrations. 306 Pages.

Price, $10.00

A sumptuous book, dealing with some of the most stately houses and charming gardens in America. The illustrations are in nearly all cases made from original photographs, and are beautifully printed on double coated paper. Attractively bound. The book will prove one of the most interesting books of the year and will fill the wants of those who desire to purchase a luxurious book on our American Homes.

Munn & Company
Publishers of "Scientific American"
361 BROADWAY, NEW YORK

THE NEW AGRICULTURE

By
T. BYARD COLLINS

8vo. Cloth. 376 Pages
100 Illustrations
Price, $2 00, Postpaid

THIS new and valuable work sets forth the changes which have taken place in American agricultural methods which are transforming farm life, formerly so hard, into the most independent, peaceful and agreeable existence. Farm life to-day offers more inducements than at any previous period in the world's history, and it is calling millions from the desk. The present work is one of the most practical treatises on the subject ever issued. It contains 376 pages and 100 illustrations.

In brief, the Contents are as follows:

CHAPTER I. This chapter contains a general statement of the advantages of farm life.

CHAPTER II. Deals with the vast systems of irrigation which are transforming the Great West, and also hints at an application of water by artificial means in sections of the country where irrigation has not hitherto been found necessary.

CHAPTER III. Gives the principles and importance of fertilization and the possibility of inoculating the soil by means of nitrogen-gathering bacteria.

CHAPTER IV. Deals with the popular awaking to the importance of canals and good roads, and their relation to economy and social well-being.

CHAPTER V. Tells of some new interests which promise a profit.

CHAPTER VI. Gives a description of some new human creations in the plant world.

CHAPTER VII Deals with new varieties of grain, root and fruit, and the principles upon which these modifications are effected and the possibilities which they indicate.

CHAPTER VIII. Describes improper methods in agricultural practice.

CHAPTER IX. Devoted to new machinery by which the drudgery of life on the farm is being eliminated, making the farm a factory and the farmer the manager of it.

CHAPTER X. Shows the relation of a body of specialists to the American farmer, who can have the most expert advice upon every phase of his work without any expense whatever to himself.

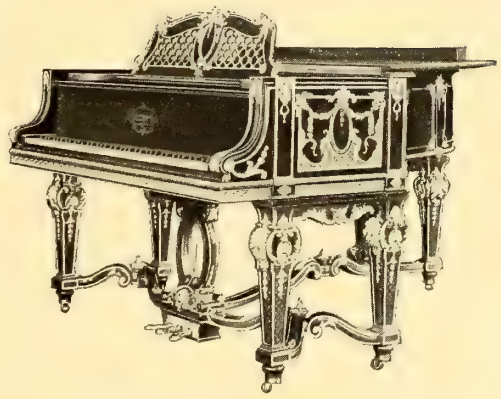
MUNN & CO., Publishers 361 Broadway, NEW YORK

IN the designing and manufacture of Period and Art cases to harmonize with any plan of architecture or decoration, Steinway & Sons are the recognized leaders, as in all other departments of piano making—a distinction they have enjoyed for three generations. Every

STEINWAY
ART PIANO

is a true representation of its respective period—a veritable gem of beauty and perfection. A visit to the Steinway Studios will reveal that, in these masterpieces of pianocraft, music and decorative art are so deftly blended that they at once command the admiration and praise of architect, artist and connoisseur.

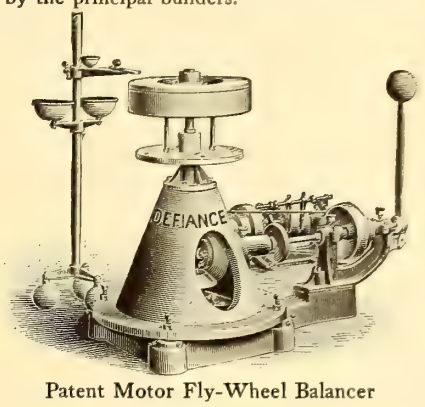
STEINWAY & SONS
Steinway Hall
107-109 East 14th Street, New York
(Subway Express Station at the Door)



Steinway Parlor Grand Piano in the period of Louis XIV, gilt and enameled

Automobile Owners and Drivers
ATTENTION!

Stop that constant vibration by having the fly-wheel of your engine given a perfect running balance. This machine is used by the principal builders.



Patent Motor Fly-Wheel Balancer

MANUFACTURED BY
THE DEFIANCE MACHINE WORKS
DEFIANCE, OHIO

Garden Terra Cotta
Italian Flower Pots

THE GALLOWAY POTS have met the popular demand for an ornamental pot, having strength, durability and artistic design at a reasonable price. Made in three shapes and all sizes.

Our Booklet, "Terra Cotta and Pottery for Garden and Home," filled with beautiful designs of ***Pots, Vases, Sun Dials, Benches*** and other pieces of garden furniture, will be sent upon request.

William Galloway
3222 Walnut Street PHILADELPHIA

The Best of Servants

A customer writes: *"Twenty-one years ago I purchased from your firm a 6-inch Ericsson Hot-Air Engine, and it has been in constant use all that time. I am glad to say that it is the best servant I have ever had, and it works as good to-day as the day when I bought it; it gives perfect satisfaction and does all you claim for it. I have used it with gasoline, gas, and wood for fuels. I can't speak too highly of its working."*

Yes, the Hot-Air Pump is in all respects an ideal servant. It works without grumbling. It is always ready to do its duty. It requires no oversight. It knows its business, and does its work as well as the work can be done. It needs neither rest nor holidays. There is another likeness, too: those who have experience of its good qualities are always eager to recommend it to their friends. Again, the Hot-Air Pump is not only the best but also the most economical of servants: it will save the time of others in your employ. Look around your place and see how much time is spent daily in conveying water by hand for the laundry, the live stock, the garden, and every household use. All this drudgery is relieved by a Hot-Air Pump. It frequently takes the place of one or more domestic servants, thus in a few months paying its entire first cost. It is the most economical form of constant water supply now known, and will outlast a generation of users.

Be sure that the name "REECO"-RIDER or "REECO"-ERICSSON appears upon the pump you purchase. This name protects you against worthless imitations. When so situated that you cannot personally inspect the pump before ordering, write to our nearest office (see list below) for the name of a reputable dealer in your locality who will sell you only the genuine pump. Over 40,000 are in use throughout the world to-day.

Hot-Air Pump

Write for Catalogue E, and ask for reduced price-list.

RIDER-ERICSSON ENGINE CO.

(Also builders of the new **"Reeco" Electric** *Pump.)*

35 Warren Street, New York
239 Franklin Street, Boston
40 Dearborn Street, Chicago
40 North 7th Street, Philadelphia
234 West Craig Street, Montreal, P. Q.
22 Pitt Street, Sydney, N. S. W.

THE **most modern, and best illuminating and cooking** service for isolated homes and institutions, is furnished by the **CLIMAX GAS MACHINE.**

Apparatus furnished on **TRIAL** under a **guarantee to be satisfactory** and in advance of all other methods.

Cooks, heats water for bath and culinary purposes, heats individual rooms between seasons—drives pumping or power engine in most efficient and economical manner—also makes brilliant illumination. **IF MACHINE DOES NOT MEET YOUR EXPECTATIONS, FIRE IT BACK.**

Send for Catalogue and Proposition.

Low Price Better than City Gas or Electricity and at Less Cost.
Liberal Terms

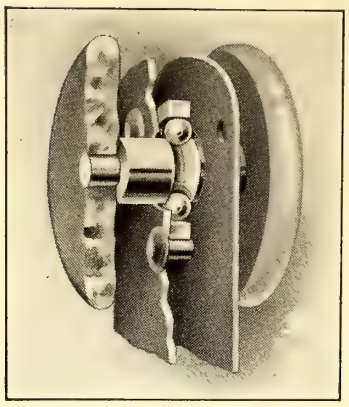
C. M. KEMP MFG. CO.
405 to 413 E. Oliver Street, Baltimore, Md.

Lane's Trolley Parlor Door Hangers and Track

THE particularly distinguishing features of the Lane Trolley Door Hanger equipment are the excellence of the ball bearing and the lateral as well as vertical adjustment of the track.

Lane Trolley Hangers are made in both the rigid and adjustable pendant styles and with both single and double trucks. All are fitted with machined and hardened ball bearings as shown and in all the various details the quality of Lane products is maintained, thus virtually placing them in a class by themselves.

Send for Complete Catalog.



SECTION BALL BEARING IN LANE TROLLEY HANGERS

LANE BROTHERS COMPANY, (The Door Hanger Manufacturers)
434-466 Prospect Street, Poughkeepsie, N. Y.

New Papers on Concrete

Reinforced Concrete

Concrete Building Blocks

Scientific American Supplement 1543 contains an article on Concrete, by Brysson Cunningham. The article clearly describes the proper composition and mixture of concrete and gives the results of elaborate tests.

Scientific American Supplement 1538 gives the proportion of gravel and sand to be used in concrete.

Scientific American Supplements 1567, 1568, 1569, 1570 and 1571 contain an elaborate discussion by Lieut. Henry J. Jones of the various systems of reinforcing concrete, concrete construction, and their applications. These articles constitute a splendid text book on the subject of reinforced concrete. Nothing better has been published.

Scientific American Supplement 997 contains an article by Spencer Newberry, in which practical notes on the proper preparation of concrete are given.

Scientific American Supplements 1568 and 1569 present a helpful account of the making of concrete blocks by Spencer Newberry.

Scientific American Supplement 1534 gives a critical review of the engineering value of reinforced concrete.

Scientific American Supplements 1547 and 1548 give a resumé in which the various systems of reinforced concrete construction are discussed and illustrated.

Scientific American Supplements 1564 and 1565 contain an article by Lewis A. Hicks, in which the merits and defects of reinforced concrete are analysed.

Scientific American Supplement 1551 contains the principles of reinforced concrete with some practical illustrations by Walter Loring Webb.

Scientific American Supplement 1573 contains an article by Louis H. Gibson on the principles of success in concrete block manufacture, illustrated.

Scientific American Supplement 1574 discusses steel for reinforced concrete.

Scientific American Supplements 1575, 1576 and 1577 contain a paper by Philip L. Wormley, Jr., on cement mortar and concrete, their preparation and use for farm purposes. The paper exhaustively discusses the making of mortar and concrete, depositing of concrete, facing concrete, wood forms, concrete sidewalks, details of construction of reinforced concrete posts, etc.

Scientific American Supplement 1583 gives valuable suggestions on the selection of Portland cement for concrete blocks.

Scientific American Supplement 1581 splendidly discusses concrete aggregates. A helpful paper.

Scientific American Supplements 1595 and 1596 present a thorough discussion of sand for mortar and concrete, by Sanford E. Thompson.

Scientific American Supplement 1586 contains a paper by William L. Larkin, on concrete mixing machinery in which the leading types of mixers are discussed.

Scientific American Supplement 1626 publishes a practical paper by Henry H. Quimby on concrete surfaces.

Scientific American Supplement 1624 tells how to select the proportions for concrete and gives helpful suggestions on the treatment of concrete surfaces.

Scientific American Supplement 1634 discusses forms for concrete construction.

Scientific American Supplement 1639 contains a paper by Richard K Meade, on the prevention of freezing in concrete by calcium choloride.

In **Scientific American Supplement 1605** Mr. Sanford E. Thompson thoroughly discusses the proportioning of concrete.

Scientific American Supplement 1578 tells why some fail in the concrete block business.

Scientific American Supplement 1608 contains a discriminating paper by Ross F Tucker on the progress and logical design of reinforced concrete.

EACH NUMBER *of the* SUPPLEMENT COSTS 10 CENTS. A SET *of* PAPERS CONTAINING ALL THE ARTICLES ABOVE MENTIONED WILL BE MAILED *for* $3.40

Order from your Newsdealer or from

MUNN & CO., Publishers, 361 BROADWAY, **New York City**

MAKING A COUNTRY HOME

By E. P. Powell

V. THE COUNTRY HOME COW

A COUNTRY home has three special privileges: the family horse, the pet cow, and the fresh vegetable garden—I do not know which of these is the most important, for we can not get on well without all three. The cow is perhaps the most absolutely important where the family is large. Milk does everything in the way of giving comfort and health. Then there is the waste which goes to keep the family pig and make the hens lay eggs. I am glad to see that the sour milk, which used to be rejected from the table, is getting to be an important item of diet. Give me a good bowl of sour milk twice a day, and above all the so-called "lobbered" milk, with a dash of nutmeg and sugar, and I will leave the sweet milk to others. It has been recently discovered that this is not only one of the most healthful, but one of the best flesh-making foods. Then we have the charm of churning our own butter, and that wonderful by-product, buttermilk. The one thing that I wonder at most, at my winter home in Florida is, that with cows everywhere in sight, we find it so difficult to get a pail of sour milk or a bowl of buttermilk. Even with oranges I do not feel quite satisfied without more of the product of the cow.

Probably the best way in a country home of ten or twenty acres is to keep two cows; one of these to have her calf in the spring, and the other in the fall. This insures us plenty of new milk all the year round. However, I find that a single cow, if milked with care, well housed and well fed, leaves a gap of only about one month when milk must be purchased. The only economic method of keeping a cow on a small homestead is to turn every foot of pasturage into garden or orchard, and feed her with cut fodder. I began with sowed corn, constantly reducing the size of my pasture, until I had only a large yard of about fifty feet square. I found, however, that I could use the corn ground more profitably for berries, and then changed my feed to lawn trimmings and June-cut hay. With this, once a day, went a pail of table waste. Every household can furnish at least one pail a day. To this add a liberal cutting of beets, carrots and other vegetables. Feeding a cow in this manner will teach careful economy in household affairs. You will find that nearly all waste comes in as a valuable factor in producing milk or elsewhere adding to comfort.

If you wish a-plenty of milk for the whole year, you must provide early June-cut hay. You see I am not talking at all about mill stuff, because that costs a large amount of money, and often entirely neutralizes the profit of a cow. I rarely feed anything of the kind, or spend a dollar on cow feed, outside of my own garden and orchard. Cut your hay between the first and tenth of June, when it has in it all the richness and sweetness that goes to make milk. July-cut hay is of very little value to any animal, least of all the cow. Alfalfa is one of the best possible feeds, and millet, if early cut, is another. A very small patch of alfalfa, cut three or four times, right in the milk of it, will delight your cow, and keep her in the milk mood all summer. Then be sure to have a mow of it for winter. There is a lot of rowen or aftermath left uncut all about the country. Many of our common grasses and weeds that are supposed to be utterly useless make first rate cow feed. The common ox-eyed daisy if cut just as it opens its eyes will be relished by the cow, and will at least help to keep up her flesh—it is full of

oil. In the garden there should be a bed of beats or rutabagas—nothing is better both for flesh and milk. In Florida beggar weed is splendid cow rations.

The cow yard need not be very large, but it should be a model of comfort and neatness. It should be well drained, so that an inch of mud need never be seen. There should be a well, with a tub always full, unless you can bring water through a pipe into her stall. This water should be fresh every day, and plenty of it. She should be allowed to go to it whenever she pleases, instead of being hitched up most of the time, and sent to water at your option. This yard should be thoroughly well shaded, for a cow likes shade as well as water. Let it be every way made pleasant; for you will discover, if you observe, that a cow has her tastes. She will invariably lie down of a moonlight night with her face to the moon. Both cows and horses observe a good deal about them, as we do. My neighbor, who has fourteen horses in charge, built a large house over his barn well—giving as a reason that his horses "looked over the valley so much, if they had the chance, that it took three or four times as long to water them." The cow is by no means the board-faced animal that some people suppose. Homer could give no better description of Juno than to call her cow-eyed. If the manure is kept, of necessity, in the cow yard, let it be removed to compost piles very frequently. If left in the yard it is not only a nuisance to yourself but to the cow. Composted with vegetable waste, autumn leaves, coal ashes, etc., you get all the fertilizer your land will need.

When you have finished with your yard, turn attention to the stable and stalls. Stanchions may be necessary where many cows are kept, but for a single cow there should be prepared as good a box stall as you give your pet horse. It should be warm and lighted with a large window. The feed should come down into a capacious manger, and her pail of extra food from the house should be placed in a box by itself, so as not to foul the hay. I do not know of any animal that is more particular about clean feed than the cow. A little care in this line will make her more particular and more valuable. Indulge all these whims in an animal, and encourage them in manifesting likes and dislikes. The stall should be arranged so that it can be barred or locked during feeding time to prevent one animal from trespassing on another.

I prefer a cow of good size, one that will make beef as well as milk. For this reason I do not select a Jersey, as a rule, although I have had Jersey grades that were very satisfactory. In the ordinary country home, milk is more important than blood, and behavior is better than pedigree. Of the imported stocks I prefer a Holstein-Fresian, as a rule. They are large, generally kindly, and give a large flow of medium quality milk. If the milking must be done by a hired man, I object to the Jersey entirely, as an old dairyman said in a Farmers' Institute, "If you keep Jerseys you must do your own milking." That is, they need special care and will not thrive without it. The milking must be done with gentleness and thoroughness. We have, however, lost some of our very best breeds of cows, through a fancy for something from foreign countries. New York State fifty years ago had a cow of large build, gentle disposition, grand milk-giver, easy keeper, and in other ways just exactly what ought to have been retained. It was worth more to the country home than any imported breed ever seen. I am happy to say that Cornell University, in its Agricultural Department, is now trying to restore this admirable cow. It was one of the most domestic creatures I have ever seen. In my boyhood I used to sit down

The ideal fabric for distinctive, yet inexpensive, draperies and curtains of every description. The exquisite designs and colorings are peculiar to Serpentine Crêpe, which, with its permanent crinkle, is not injured by moisture or even rain. Ask your retailer for it. If he has not either the patterns or colorings you desire, he can easily get them. If he will not, write us for free sample book, and list of retailers selling Serpentine Crêpe.

PACIFIC MILLS, 70 Kilby Street, Boston, Mass.

DON'T BE KNOCKED OVER

By Stenches from Backyard Debris

Why not look up the Stephenson Method, seven years on the market, and if satisfied protect the health of your family by installing **The Stephenson**

Underground Garbage Receiver

which removes all objections of the old swill-tub?

The Stephenson Underground Refuse Receiver for Ashes.
The Stephenson Underground Earth Closets for Camps.
The Stephenson Portable Metal House for Above.
The Stephenson Spiral Ribbed Ash Barrel, outwears two.

SOLD DIRECT

C. H. STEPHENSON, Manufacturer
21 Farrar Street Lynn, Mass.

"Rustic Work"

which gives that artistic finish to country estates

Will Last for Years

Rustic Tea Houses, Boat and Bath Houses, Arbors, Pergolas, Back Stops for Tennis Courts, Rustic Bridges for Ravines. Entrance Gates, Chairs, Tables. Flower Stands, etc., in fact Rustic Work of every description.

Give the Birds a Home

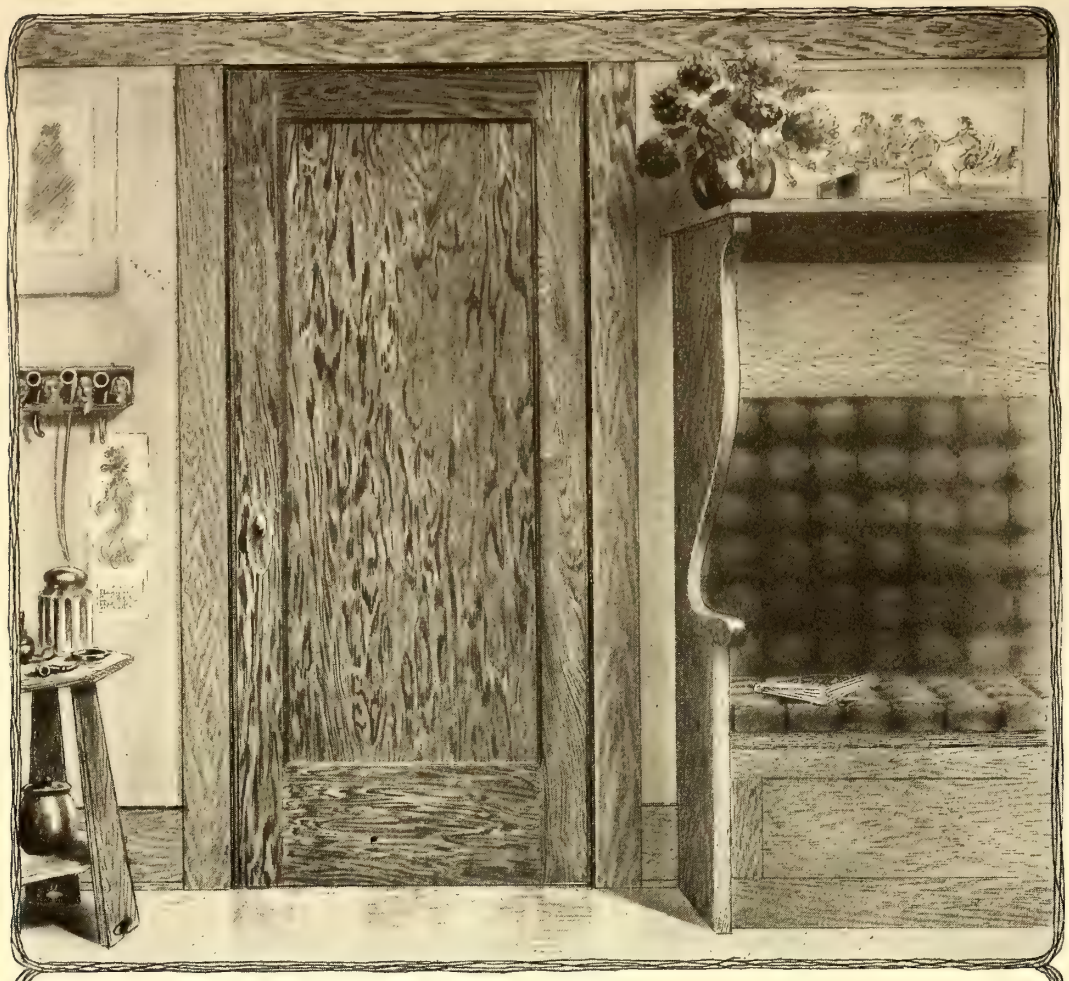
Rustic Bird Houses. One Room, $2, two rooms, $3. Send for catalogue and sketches or have our representative call upon you.

RUSTIC CONSTRUCTION WORKS
33 Fulton Street, New York

BOOKS

Relating to Architecture, Decoration, Furniture, Rugs, Ceramics, Etc., will be recommended and supplied by our well-equipped Book Department.

MUNN & COMPANY NEW YORK
Publishers of Scientific American 361 Broadway



Simple—Artistic

The simple lines of this door adapt it for craftsman interiors, Dens, Libraries, Studies, etc.; its beautiful grain and finish give a note of distinction to any room.

Cross section showing construction of 1⅜ inch door.

The name "*Morgan*" is branded on each door.

are perfect doors. Built of several layers with the grain running crosswise, pressed together with waterproof glue, making shrinking, warping or swelling impossible. Veneered in all varieties of hardwood—birch, plain or quarter-sawed red or white oak, brown ash, mahogany, etc. **Morgan Doors** are light, remarkably strong and absolutely perfect in every detail of construction. Each **Morgan Door** is stamped "*Morgan*" which guarantees quality, style, durability and satisfaction.

In our new book, "The Door Beautiful," **Morgan Doors** are shown in their natural color and in all styles of architecture—Colonial, Empire, Mission, etc., and it is explained why they are the best and cheapest doors for permanent satisfaction in any building. ***A copy will be sent on request.***

Architects: Descriptive details of Morgan Doors may be found in Sweet's index, pages 678 and 679.

Morgan Company, Dept. A, Oshkosh, Wisconsin.

Morgan Sash and Door Company, Chicago, Ill.
Morgan Company, Oshkosh, Wisconsin. Morgan Company, Baltimore, Maryland.

Iron Railings, Wire Fences and Entrance Gates of all designs and for all purposes
CORRESPONDENCE SOLICITED : CATALOGUES FURNISHED

FENCE

Tennis Court Enclosures, Unclimbable Wire Mesh and Spiral Netting (Chain Link), Fences for Estate Boundaries, Industrial Properties, etc.

F. E. CARPENTER CO., :: 253 BROADWAY NEW YORK CITY

Sheep Manure

Kiln dried and pulverized. No weeds or bad odors. **Helps nature hustle.** For garden, lawn, trees, shrubs, fruits and house plants.

$4.00 LARGE BARREL, Cash with Order. Delivered to your Freight Station.

Apply now.

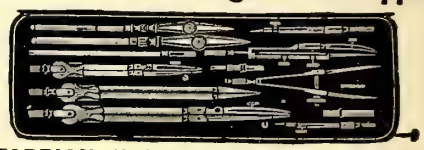
The Pulverized Manure Co., 21 Union Stock Yards, Chicago.

St. Louis, Mo. Baltimore, Md.

F. Weber & Co.

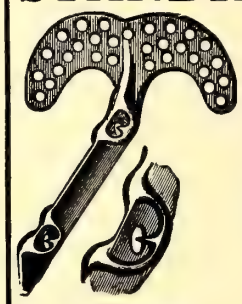
1125 Chestnut St., Philadelphia, Pa.

Architects' and Engineers' Supplies



"FABRIANO" Hand-Made Drawing Papers
Superior to any other hand-made paper
F. Weber & Co.'s Illustration Boards, Air Brushes and Materials

STANDING SEAM ROOF IRONS

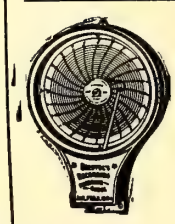


CLINCH right through the standing seam of metal roofs. No rails are needed unless desired. We make a similar one for slate roofs.

Send for Circular

Berger Bros. Co.

PATENTED PHILADELPHIA



BRISTOL'S RECORDING THERMOMETERS

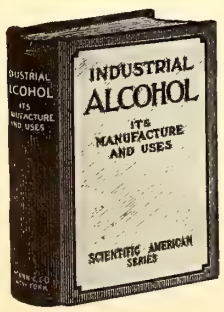
make continuous records of atmospheric temperatures, and are designed for both indoor and outdoor temperatures. Send for new catalogues.

THE BRISTOL COMPANY, WATERBURY, CONN.
NEW YORK *Branches* CHICAGO

516 Pages, 107 Engravings NOW READY *Price, Four Dollars*

Industrial Alcohol

ITS MANUFACTURE AND USES



A Practical Treatise based on Dr. Max Maercker's "Introduction to Distillation" as revised by Drs. Delbrück and Lange

COMPRISING

Raw Materials, Malting, Mashing and Yeast Preparation, Fermentation, Distillation, Rectification and Purification of Alcohol, Alcoholometry, The Value and Significance of a Tax-Free Alcohol, Methods of Denaturing, Its Utilization for Light, Heat and Power Production, A Statistical Review, and the United States Law

By JOHN K. BRACHVOGEL, M.E.

THE value and significance of a tax-free alcohol have been so widely discussed in the press and periodical literature of the entire country, that it is unnecessary to emphasize the great importance of the subject, especially to our agricultural and industrial interests. For years we have been far behind the nations of Europe in this regard, and in consequence our literature has been sadly lacking in authoritative works covering this phase of industrial activity. This book was designed with the especial purpose of filling this want, and it is the latest and most comprehensive work of its kind which has been published in this country.

Few in number are those to whom this book would not prove of interest and value. The farmer, the manufacturer, the power-producer, the householder, will all find that denatured alcohol is of such importance to them, that its use and introduction will effect savings and economies which were hitherto impossible of accomplishment.

FOR SALE AT ALL BOOKSTORES

JUST PUBLISHED

THIRD EDITION OF

KIDDER'S Churches and Chapels

By F. E. KIDDER, Architect

This edition has been thoroughly revised by the author, and enlarged, many new designs being added, including several new designs for Catholic churches. There are 120 illustrations in the text and more than **50 full-page plates.** The book contains a large number of plans and perspectives of churches of varying costs. Besides this there is much concise and practical information relating to planning and seating; details of Construction, Heating and Ventilation, Acoustics, etc., making it in its present form

The Best American Book on Church Design and Construction

One oblong quarto volume. Price, net, $3.00

Munn & Co., 361 Broadway, New York City

or lie down on the family cow while she chewed her cud, and while I was milking the pet cat sat on the cow waiting for her rations. There was nothing after her to equal an Ayrshire in milk-giving; but an Ayrshire is too full of fun and mischief for the ordinary country home. She will put her feet on the stable stairs and eat out of the second story mow, and I have seen one with her feet on a sloping apple tree picking apples for herself.

This little talk about the family cow will not sut some because it does not talk about balanced ration, and it does not advocate spending a large amount on mill feeds. I believe that the country home should not only have a cow, but that it should be so arranged that it can feed a cow. I have implied all the way that the cow should be thoroughly domesticated and treated as a member of the family. I believe this to be quite as true of the family cow as of the horse and the dog. My collies are no more at home with me than the beautiful creature who gives me a pail of milk twice a day. Domesticity is the first point to be aimed at. Home should include everything that occupies our acres. To make the whole happy should preclude making the whole profitable; yet in the end nothing pays better than kindness and good will.

I have said nothing at all about the habit of hitching out cows in dooryards and orchards and along the street sides. This habit is as uneconomical as it is slovenly. At least two-thirds of the food is tramped or fouled so that the cow will not eat it. She is very dainty about what she has stepped on, and will not take it as food. The same amount of ground, if mowed, will furnish three or four times the feed, and at regular periods for her meals. I can see no advantage in this staking out unless it be where the owner is crippled or a woman. In an orchard the cow will almost surely get at more or less fruit, which will help to dry her up, and the limbs will be chewed and broken wherever she can reach. The whole yard or orchard will be a disagreeable place where you can not walk with pleasure or take a friend to study your fruit. The cow is invariably dried up before her time. In fact, you have nothing before you that is safe except the plan which I have suggested, judicious stabling and considerate feeding.

A) Since 1893, McHUGHWILLOW Furniture, New York made, has been the standard of proper style, high quality and good value; simple in design and detail, strong in build, fit for all year round use.
B) With a prepaid order for McHUGHWILLOW Furniture amounting to $75, one Bar Harbor Cushioned Armchair is included without charge; with $100 orders one Norfolk or Palm Beach Cushioned Armchair is given free of cost.
C) Prepaid orders, $25 and over are packed and go freight free all over the United States.
D) 200 models are shown in the Salesrooms; those who cannot visit New York may have the portfolio of 117 sketch leaflets, illustrating almost 2000 examples of McHUGHWILLOW, Craftstyle and Oldstyle Easy Furniture, for 25 cents--Stamps or Postal Note; allowed on first purchase of furniture.
JOSEPH P. McHUGH & Co.,
9 W. 42d St.; opposite Library
(Only address; no branches)

Vudor Porch Shades

The Pleasure of the Porch

is increased many fold by the use of Vudor Porch Shades. They make the porch available at any hour of the hottest day—a cool, shady, secluded retreat, breeze-open, but protected from the sun's glare and heat.

Vudor Porch Shades are made of wide strips of linden wood firmly bound with strong seine twine. They can be seen through from the inside, but not from the outside. They are artistically stained with water-proof colors in greens and browns and are in keeping with the finest residence. They last for years. Vudor Porch Shades must not be confused with the flimsy, ragged and cheap-looking bamboo or imported screens. Vudor Porch Shades come in various widths, and are inexpensive; single shades cost from $2.25 up, according to width, and an ordinary porch can be completely equipped for $5 to $10.

Write for Booklet and Name of Your Local Dealer

We will send you free upon receipt of a postal card request, the beautiful Vudor booklet fully describing and illustrating in actual colors Vudor Porch Shades and Vudor Re-enforced Hammocks. With the booklet we will send you name of local dealer in your town who sells our goods. Write to-day.

HOUGH SHADE CORPORATION, 240 Mill Street, JANESVILLE, WISCONSIN

The background of this advertisement shows section of a Vudor Porch Shade, actual size.
The genuine Vudor Porch Shades always bear the Vudor aluminum name-plate.

Enametile
THE NEW TILE

Wherever ceramic or encaustic tiles can be used, ENAMETILE can be used with the same artistic effect and at a money saving of from one-half to two-thirds of the cost of ordinary tile.

ENAMETILE is **better** than ordinary tile because it gives the effect tones and colorings of the most artistic tiles, but will not crack, break or loosen, as the best tiles will.

ENAMETILE is **flexible metal** embossed and highly enameled, sanitary, germ-proof, vermin-proof and easily cleaned with soap and warm water. Specially suitable for bathrooms, ceilings, etc.

Enametile Art Portfolio Free

A selection of artistic designs in Enametile showing varieties of colorings, decorations, etc. Investigate Enametile. It's a pleasure to see it and a profit to use it.

Plans and estimates furnished you direct or your architect or contractor.

New York Metal Ceiling Company

544 West 24th Street, New York

Sole Manufacturers. Makers of Metal Ceilings for Residences and Public Buildings. Catalogue sent **Free.**

GOING TO BUILD?—By All Means Consider This

We will *save you money* on plans and give you *service second to none* in the country

From No. 3 Book

Through our three handsome books of Residence Designs, we are supplying the need for practical and successful plans at the lowest practical price. Every set of plans ordered is furnished in duplicate—triplicate, if you need them, and you can have the house just as you want it because we write the specifications to conform to your desires. No stereotyped specifications. No extras or strings tied to the price of plans.

The books are as follows, sent prepaid on receipt of price.

From No. 1 Book

No. 1. 25 Designs of Residences ranging in price from $1,500 to $5,000 . . . $.50
No. 2. " " " " " " " " $5,000 to $20,000 . . . $1.00
No. 3. " Cement Designs of Residences ranging in price from $2,000 to $20,000 $1.00

Photographic cuts of Flat and Apartment Houses, Schools, Theatres, Clubs, Churches, etc., 10c. each. Note: We *rebate* price of books or cuts on first order for plans.

ARTHUR G. LINDLEY CO., Architects, Parker Building, Schenectady, N. Y.

Dept. C. Bank and Business References

Accurate information regarding THE WORLD'S INDUSTRIAL PROGRESS is a necessity of MODERN BUSINESS LIFE, as well as a subject of ABSORBING INTEREST for every thinking man and woman.

For nearly sixty-five years the

Scientific American

has been the most widely quoted authority on all matters relating to the progress made in the fields of discovery, invention and scientific news.

Free from dry technicalities, it tells the story of the WORLD'S PROGRESS in a fascinating and practical manner, which makes its weekly visits welcome to the entire family. It is unique among periodical literature because it contains authoritative information which cannot be obtained from any other source.

Its regular perusal is in itself a liberal education in the subjects which make the marvelous achievements of the present age possible.

Subscription price, $3 per year.

Subscribe Now for the year 1909 and we will send you the numbers for **November and December, 1908** (including the Special Engineering Number) **ABSOLUTELY FREE.** In other words, fourteen months for the price of one year's subscription.

MUNN & CO., 361 Broadway, New York City

American Homes and Gardens

gives its readers the experience of experts in solving the most difficult HOME PROBLEMS. It is a thoroughly practical magazine, having the word "Home" for its keynote.

HOW TO BUILD THE HOME

Floor plans and details of construction of houses of moderate cost as well as more pretentious mansions are a feature of each issue.

HOW TO DECORATE THE HOME

The most experienced decorators in the country describe how the best and most artistic results are attained from the point of expenditure, and the more important one of satisfaction.

HOW TO PLAN AND LAY OUT THE GARDEN

The frame of the House-picture is the garden, and success in its treatment means that each tree and shrub is correctly placed as well as properly grown, hence this department will be found most helpful.

OUTDOOR LIFE AND AMUSEMENTS, ARTICLES ON HOUSE INDUSTRIES,

every phase of country life is authoritatively discussed from month to month in its pages. "American Homes and Gardens" is conceded to be the handsomest magazine published in America. Its beautiful cover printed in colors changes each month, and is always a work of art. **Subscription price, $3 per year.** If we receive your order for a year's subscription now we will send you the November and December, 1908, numbers free; in other words, fourteen months for price of a year's subscription.

MUNN & CO., 361 Broadway, New York City

RATS KILLED BY SCIENCE

By the use of the wonderful bacteriological preparation, discovered and prepared by Dr. Danysz of Pasteur Institute, Paris, science has at last found the only successful method for exterminating rats and mice.

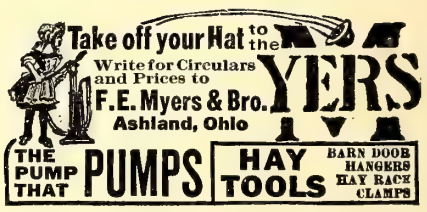
Used with striking success for the past few years in England, Scotland, France, Holland and Russia.

DANYSZ VIRUS

contains the germs of a disease peculiar to rats and mice only, and is absolutely **harmless to birds, human beings and other animals.** The rodents always die in the open, because of feverish condition. The disease is also contagious to them. The Virus is easily prepared and applied.

How much to use: A small house, one tube; ordinary dwelling, three tubes (if rats are numerous, not less than six tubes). One or two dozen for large stable with hay loft and yard. Three to six tubes per acre in case of open fields, game preserves, etc. Price: one tube, 75c.; three tubes, $1.75; one dozen, $6.00 delivered.

INDEPENDENT CHEMICAL COMPANY
Dept. Z, 25 Old Slip New York, N. Y.



My New Twenty-Page Catalogue of

ANTIQUES

is the largest and most comprehensive that I have issued. Contains *descriptions* and *prices* of hundreds of *genuine Antiques*, Old Furniture (mostly Mahogany), Rugs, Old China, Old Glass, Copper, Brass, Pewter, etc. Many old (Colored and Black) English Prints. A fine collection of Antique Jewelry, many very unique pieces, Old Blue Quilts, etc.

All at very moderate prices.

This Catalogue sent free on request to any one interested in Antiques.

MRS. ADA M. ROBERTS

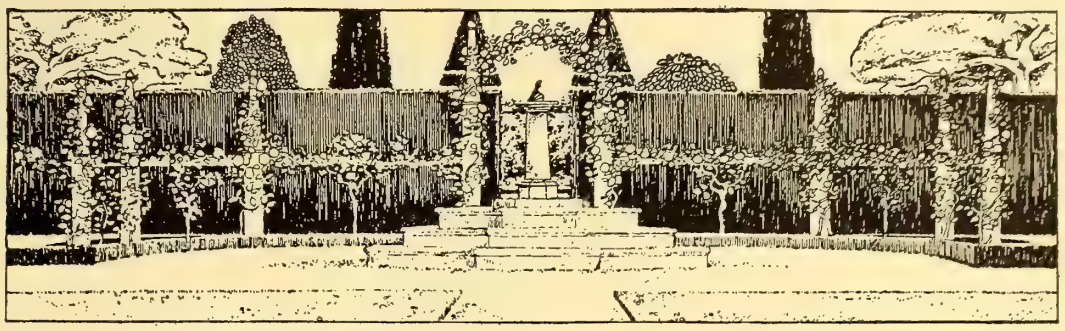
Box 93 Washington, New Hampshire

To secure the richest and most durable effects in wood-finishing use JOHNSON'S ARTISTIC WOOD FINISHES JOHNSON'S

Send for Free Booklet, edition AH-6

S. C. JOHNSON & SON, "*The Wood-Finishing Authorities*"
RACINE, WIS.

The Garden in Your Town



IS it a success? If so, the Garden Competition Editor of American Homes and Gardens wants to know about it—he will pay $200 in prizes for the five best-planted, developed and successful suburban or village gardens. Write to the Garden Competition Editor and tell him how you planted your garden and what success you had with it; tell him of the plants with which you have had the best results, and also those which have been failures. Send him a good photograph and a plan of the garden. *We want you to help us so that we may help others to beautify their surroundings. You need not be a skilled writer to tell a story of your garden success. Tell it in your own way.*

$200 for Prizes

For the best garden received we will pay:

For the First, - - -	$100.00
For the Second, - -	50.00
For the Third, - -	25.00
For the Fourth, - -	15.00
For the Fifth, - - -	10.00

Conditions

Competitors for the prizes must comply with the following conditions:

1. A general description of the garden, giving the size of the plot and the kind of plants used in planting.
2. Drawings of the plot are to be made, preferably on a scale of eight feet to the inch, showing the positions of the various plants and shrubs.
3. Photographs of the garden are to be sent printed on solio paper and should not be less than 5 x 7 inches in size. If possible to do so, please also send a photograph showing the garden before planting.
4. Descriptions, photographs and drawings are to be marked with a pseudonym, which is to be enclosed in a sealed envelope containing the name and address of the competitor. As soon as the judges have decided upon the five best gardens they will notify the Editor, who will open the envelope bearing the proper pseudonym and containing the competitor's true name. The competitor will be notified by the Editor that he has won the prize.
5. The Garden Competition Editor reserves the right to publish in American Homes and Gardens all gardens which in the opinion of the judges are worthy of honorable mention. The names of those whose gardens are reproduced will be published with the photograph.
6. Contributions are to be submitted to the Garden Competition Editor, American Homes and Gardens, 361 Broadway, New York.
7. The Garden Competition closes September 15, 1909. Contestants need not be subscribers to American Homes and Gardens, and no charge or consideration of any kind is required. *No photographs, manuscripts or plans will be returned.*

BURLINGTON Venetian and Sliding BLINDS

Venetian Blind for inside window and outdoor veranda. Any wood; any finish to match trim.

SCREENS AND SCREEN DOORS

¶ Equal 500 miles northward. Perfect privacy with doors and windows open. Darkness and breezes in sleeping rooms.

Sliding Blinds for inside use. Require no pockets. Any wood; any finish.

WRITE FOR OUR CATALOGUE, PRICE-LIST AND PROPOSITION TO YOU

BURLINGTON VENETIAN BLIND CO., 975 Lake St., Burlington, Vermont

How Much Happiness

will you give to sufferers in dark hot tenements, by sending them to

Sea Breeze

our Fresh Air Home, and the hospital for tuberculous children, where Smiling Joe was cured?

$10 sends 4

for a whole week of sweet cool air, good food, games and invigorating ocean bathing.

"If you lived in our dark basement you would know why we want to go to Sea Breeze."

"It's more fun to be a 'little father' at Sea Breeze than to run with the gang on Ave. A."

HOW MANY MAY WE SEND AS YOUR GUESTS?

$2.50 will give a whole week of new life and cheer to a worn out mother, an aged toiler, an underfed working girl, or a convalescing patient.
5.00 gives a teething baby and its "little mother" of ten a cool healthful week.
10.00 gives four run-down school children a fresh start for next year.
25.00 names a bed for the season. $50.00 names a room.
100.00 gives a happy excursion to 400 mothers and children—for many their only outing.

Can you not have a lawn party or an entertainment for Sea Breeze?

Please send your gift to R. S. MINTURN, Treasurer, Room 24, No. 105 E. 22nd St., New York

N. Y. ASSOCIATION for IMPROVING the CONDITION of the POOR
R. FULTON CUTTING, President

"My little girl had measles and then pneumonia. The doctor says two weeks at Sea Breeze might have saved her."

To how many other such children will you help us give a fighting chance before it is too late? $5.00 will do it for one.

"It's easy to get well at Sea Breeze. It kept me from losing a whole year at school."

Bungalows and American Homes

Design No. 2, Built in California and Iowa—Cost $2,200

Our handsome 100 page, 8x11 book of Bungalows, Mission, Colonial, English timbered and concrete houses for 1909 shows interiors, exteriors, and floor plans and actual cost to build. **Figures that you can rely upon.** These designs are photos of structures **we have built** in California and throughout the country—not theoretical pen pictures. Bungalows rent and sell at sight, and are an excellent investment. Price of book $1.00, P. O. or express order, prepaid. Sample folder free.

Brown Bros., Architects, 918 Security Bank Bldg., Cedar Rapids, Iowa

"Willowcraft"

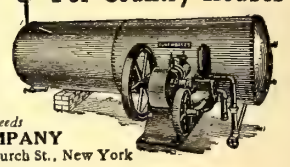
is the only durable line of **WILLOW FURNITURE** made in the United States. We are the manufacturers, and will send this sample chair for $7, fgt. prepaid, anywhere east of the Mississippi River, Write for our catalogue of 150 other patterns.

The Willowcraft Shops

Box A NORTH CAMBRIDGE, MASS.

WATER SUPPLY For Country Houses

The Problem Solved
No elevated tank to freeze or leak. Tank located in cellar. Any pressure up to 60 lbs.
The Ideal Fire Protection
Send for Illustrated Catalog 48
Let our Engineers figure out your needs



LUNT MOSS COMPANY
Boston, Mass. Branch: 50 Church St., New York

Van Dorn Iron Works Co.

PRISON, HOUSE & STABLE WORK

JOIST HANGERS
LAWN FURNITURE
FENCING, ETC.

CLEVELAND, OHIO

BOOKS

RELATING TO
Architecture
Decoration
Furniture Rugs
Ceramics, etc.

will be recommended and supplied by our well equipped Book Department.

MUNN & CO.
361 Broadway
NEW YORK

SPECIAL OFFER to Carpenters

BUILDERS AND OWNERS OF HOMES

IVES PATENT WINDOW VENTILATING LOCK. A Safeguard for Ventilating Rooms. Pure Air, Good Health and Rest Assured.

To introduce this article, Four Ventilating Locks in Genuine Bronze, Brass or Antique Copper Finish will be mailed to any address prepaid for One Dollar. Will include a forty page Hardware Catalogue and Working Model to carpenters who wish the agency to canvass for its sale. Address

The H. B. Ives Co. NEW HAVEN, Conn., U.S.A.

American Homes and Gardens for August

Mr. George Crocker's Estate at Rumsey, New Jersey

The magnificent estate of Mr. George Crocker at Rumsey, N. J., forms the theme of Barr Ferree's article in his series of "Notable American Homes." This property ranks easily among the most splendid private estates of America, and is adequately described and sumptuously illustrated. A fine property in every way, it illustrates some of the most interesting phases of the best developments of house architecture in this country.

Children's Playhouses

Mary H. Northend contributes an unusual article on small playhouses built for children. These are real houses, built in the type of individual dwellings and having all the external character of mimic homes. Interesting in themselves, they also furnish some suggestions for children of larger growth who are looking for small and economical houses for their own use. The illustrations include photographs and plans, and are complete in every way.

Grape Culture in France

The supremacy of the French in the culture of the grape is well known, but the actual methods pursued and the real results obtained are not so familiar. In this paper Jacques Boyer describes in detail the methods in vogue in one of the best-known vine centers in France. His paper is charmingly illustrated.

A Group of Modern Houses

Francis Durando Nichols has gathered a collection of nine interesting houses of comparatively small cost in this paper, and presents them in a thoroughly complete and interesting manner. The illustrations include exteriors, interiors, bits of details, and complete floor plans. The text is amply descriptive, and the paper fairly bristles with helpful suggestions and ideas.

Longfellow's "The Wayside Inn."

Few buildings in America can boast of two hundred and twenty-three years of continuous history as can the Red Horse Tavern of Sudbury, immortalized by Longfellow as "The Wayside Inn." Esther Singleton sketches the life history of this remarkable hostelry, and her paper is accompanied with a group of unique photographs of rare interest and beauty. Here is a fine old-time building still in use, and if not as good to-day as the day when built, certainly vastly more interesting and picturesque.

The Rochester Competition

The competition recently concluded by the Chamber of Commerce of Rochester for workingmen's homes is adequately treated with many plans and drawings. This competition has attracted wide attention, and has resulted in the evolution of a house of exceedingly moderate cost that is bound to become highly popular.

A Long Island Summer Home

"Annesden," at Bridgehampton, Long Island, is a charming summer home, quite characteristic of the famous region in which it is built. What it looks like, how it is planned, and what comforts its interior presents to its occupants are summarized in an interesting article on this fine country home.

Nature as Designer

Decorative designs obtained direct from Nature are matters of general interest. S. Leonard Bastin tells how ferns and various wild plants offer valuable material for decorative designs. His article is illustrated with numerous novel photographs direct from Nature.

A Connecticut House

The fine house of James W. Wheeler at New Haven is described by Charles Chauncey. The illustrations show it to be a home of immense attractiveness, while the plans show an economical and wise arrangement.

The Departments

The departments of the number are unusually strong and timely. We commend the "Monthly Comment," the "Garden Notes," and "Problems in Home Furnishing" to our widely extending circle of readers.

Here is a method of cleaning that takes away all the dust, dirt and germs—that cleans everything in one operation without the need of removing anything. It gives absolute, sanitary cleanliness. It saves time, work and furnishings. It saves on the actual cost of cleaning. Our free booklets explain in detail, giving the testimony of many enthusiastic users of "Invincible" Electric Renovators. Let us send them to you.

Dust Breeds Disease

Is there dust at your home? dust at your office? Wherever there is dust there is disease. Dust feeds and carries about all sorts of deadly germs. Dust is the world's greatest conductor of disease. It is a constant menace to health.

"Keep down dust. . . by the abolition of the deadly broom or feather duster, both of which might have been specially devised for the purpose of getting 'bugs' from the walls, floors and furniture, where they are harmlessly resting, into our nostrils." By Woods Hutchinson, A.M., M.D., on "The Conquest of Consumption." Dr. Hutchinson is an acknowledged authority.

When carpets are beaten and swept; when upholstery is brushed; when furniture is dusted —then there are myriads of germ-laden dust flecks in every breath of air.

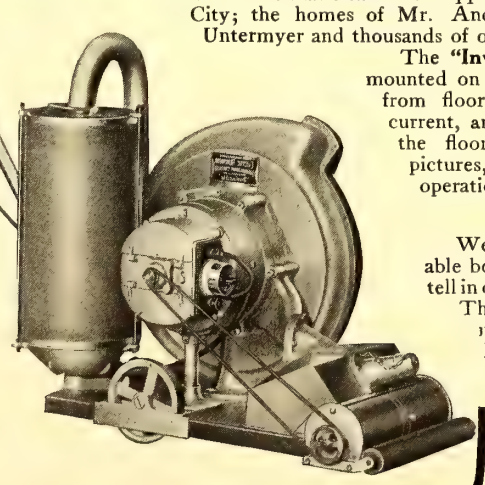
The broom is not only unhealthful, it is expensive. It wastes time and labor; it wears the life out of your most costly furnishings, grinding down dust and tearing fibre.

The **"Invincible" Electric Renovator** cleans by an irresistible indrawing current of air —by suction. It lifts every particle of dust and dirt, every germ and microbe, and carries all *under cover* to a receiver inside the machine. It is the most thorough, sanitary and economical method of cleaning ever devised. Absolutely dustless and almost silent in operation. We are eager to demonstrate for you the

"Invincible" Electric Renovator

"It Eats Dirt" — Portable — Perfect in Construction

This machine is entirely different in principle from all other air-cleaning devices, and far superior to all others. It is not a toy. It is built like a watch and will give a life-time of perfect service. The **"Invincible"** is the machine that cleans the Hippodrome, New York; the Marlborough-Blenheim, Atlantic City; the homes of Mr. Andrew Carnegie, Mr. W. K. Vanderbilt, Mr. Samuel Untermyer and thousands of others. It has proven its superiority by years of efficiency.



The **"Invincible"** is a portable machine made of aluminum and mounted on rubber-tired, ball-bearing wheels. It is easily moved from floor to floor, can be readily attached to your electric current, and can be operated by anyone. It cleans carpets (and the floors and crevices *beneath*), rugs, walls, ceilings, pictures, beds, closets, bric-a-brac—cleans everything in one operation without the need of removing anything.

SEND FOR FREE BOOKLETS

We are distributing the fifth edition of the most valuable booklets on modern cleaning ever published. They tell in detail how sanitary, economic cleaning is achieved. They give partial lists of users and letters of testimony. Let us send you these booklets to-day. Free on request. Address Dept. F.

ELECTRIC RENOVATOR MFG. CO.
934 Farmers' Bank Building
PITTSBURG, PA.

May we demonstrate for you?

It Eats Dirt.

AMERICAN HOMES AND GARDENS

Price, 25 Cents. $3.00 a Year

CONTENTS FOR JULY, 1909

PAGE

HAYING TIME 254
MONTHLY COMMENT—The Campaign against the House-fly 256
HOMES OF AMERICAN ARTISTS—"Red Oaks," the Summer Home of John M. Carrère, Esq., White Plains, New York ..... *By Barr Ferree* 257
THE WILD MUSHROOMS ..... *By Benjamin W. Douglass* 261
A RECLAIMED DWELLING—How a Farmhouse at Stokes Pogis, Villa Nova, Pennsylvania, Was Reclaimed and Transformed into a Habitable Dwelling ..... *By Paul Thurston* 264
CURTAINS FOR THE SUMMER HOME ..... *By Gertrude M. Walbran* 267
THE HEALTHIEST HOUSE IN THE WORLD ..... *By W. A. Du Puy* 269
TRIMMING OLD TREES ..... *By E. P. Powell* 270
THE GARDEN GATE ..... *By Ralph de Martin* 271
FOREST CONSERVATION AT BILTMORE ..... *By Day Allen Willey* 274
SMALL HOUSES OF SMALL COST—From $3,500 to $4,500 ..... *By Francis Durando Nichols* 278
"GLENBROOK," A NATURALISTIC GARDEN DESIGNED BY ITS OWNER ..... *By Adam Snyder* 283
"THE LINDENS," THE SUMMER HOME OF E. S. WILLIAMS, ESQ., AT NAHANT, MASSACHUSETTS ..... *By Charles Chauncey* 286
THE PROFITABLE HOUSE—A HOUSE FOR A GUARANTEED COST ..... *By Joy Wheeler Dow* 290
GARDEN NOTES xiii
CORRESPONDENCE:
PROBLEMS IN HOME FURNISHING ..... *By Alice M. Kellogg* xiv
GARDEN WORK ABOUT THE HOME ..... *By Charles Downing Lay* xiv

Making a Country Home: V. The Country Home Cow.
Insect Enemies of the Garden.
New Books.

Combined Rate for "American Homes and Gardens" and "Scientific American," $5.00 per year
Rate of Subscription of "American Homes and Gardens" to foreign countries, $4.00 a year
Rate of Subscription of "American Homes and Gardens" to Canada, $3.50 a year

Published Monthly by Munn & Company, Office of the "Scientific American," 361 Broadway, New York

CHARLES ALLEN MUNN, President - - - - FREDERICK CONVERSE BEACH, Secretary and Treasurer
361 Broadway, New York 361 Broadway, New York

[Copyright, 1909, by Munn & Company. Registered in U. S. Patent Office. Entered as second-class matter, June 15, 1905, at the Post Office at New York, N. Y., under the Act of Congress of March 3, 1879.]

NOTICE TO CONTRIBUTORS—The Editor will be pleased to have contributions submitted, especially when illustrated by good photographs; but he cannot hold himself responsible for manuscripts and photographs. Stamps should in all cases be inclosed for postage if the writers desire the return of their copy.

Photograph by Ella M. Boult

HAYING TIME

AMERICAN HOMES AND GARDENS

Volume VI July, 1909 Number 7

"Red Oaks": the entrance drive and porches

Monthly Comment

The Campaign against the House-fly

THE end of the house-fly is at hand. Scientists and educators, merchants and housewives, observers and sufferers, each and all have risen as a mighty host against the intrusions of the obnoxious insect, and declared, in the loudest possible tones, and with the utmost vehemence of scientific fact, the destruction and extinction of this annoying and dangerous creature. There remains, in short, but one thing to do, and that is to carry out the fulminations of science on this important subject, and the flyless age will then become a happy, sanitary and healthful fact.

THERE is no poetry in accomplishing the destruction of the house-fly; there is no heroism to be displayed, no great prizes in authorship or other rewards to be gained by bringing it about. The peoples of two worlds do not hang breathless upon the rifle shots with which its epidermis is pierced, and its rapidly moving body laid a dead carcass upon the earth. No costly scientific expeditions are needed to bring about the end now so ardently desired and so eloquently argued. There is nothing, in a word, but common sense, care and caution, and the battle will be won, and the human race once more assert its supremacy over the forces of nature.

YET the battles that must be waged against this foe of every household are by no means few, nor is the conflict that must be conducted an easy one. It is a campaign in which the energies of every one must be engaged. Not only must each individual home be protected against this ancient enemy of mankind, but every home everywhere, every building, every store, every place where food is bought and sold. Every spot where flies originate or make their homes must be cleaned up and kept clean. It is a work worthy of the energies of a united nation.

THAT there are many practical difficulties in the conduct of this campaign is no argument against engaging in it. It is work that should be done and that must be done, and since it is something in which every one can help, every one should do so and make his own individual contribution to the general cause. And this should be the more eagerly done, since there is an individual good that comes from effort put forth in this direction, a personal betterment, a household advantage. From the beginning of time mankind has submitted unresistingly to the ravages of the house-fly. An insect incapable of stinging or biting, it has been looked upon as an unavoidable accompaniment of the summer season, an annoying nuisance, it is true, but something that comes and goes with the season, and against which only half-hearted efforts have, at the best, been directed.

ALL this has now been changed. A vigorous campaign against the house-fly is now under way. Generaled by scientists, marshaled by ascertained fact, helped by the public press, and assisted by the common sense of the people, a great army of exterminators has now taken the field, and the battle is on. And the first gun that has been fired is a mighty one, exceedingly clever in its inventiveness and involving an obnoxious fact of terrible significance. It is, in brief, a very simple and necessary change in nomenclature. The house-fly has been retired, and, as a more descriptive and truthful name, the dread title of "typhoid-fly" has been substituted.

IT is not, indeed, a new title. As far back as 1897, Dr. Wallace Clarke, health officer of Utica, N. Y., attributed the cause of typhoid to fly transmission. Other observers noted the same suggestion, but the actual and definite renaming of the household pest appears to be due to Dr. L. O. Howard, entomologist of the Department of Agriculture, at Washington, who, in 1902, showed that the fly was a potent factor in the transmission of typhoid in country districts. And now that the connection has been shown, one does not need to be either a specialist or scientist to observe the horrid truths that must be laid at the door of this insect, nor should it seem necessary for any other instruction to be given than to call attention to the dreadful creature and its habits. That flies swarm around and amid filth has long been one of the most frequently observed facts in insect history. Dirt of every kind attracts flies, and wherever filth and waste of every description is to be found there flies are also abundant. From the nauseating feeding grounds without the house it is but a short flight to the more cleanly luxuries indoors. The researches into the interiors of sugar bowls, the promenades across the tops of cakes, the sojourns upon raw and cooked meats, even the attempts at repose upon human beings—these and many other dissipations of flydom are now known and recognized as the forerunners of a fell disease that numbers its annual victims by the thousands, with a cost and waste quite beyond ordinary calculation.

THE danger lies in the repulsive contact of the fly and in its indiscriminate associations. All this has long been a matter of common knowledge; but the fatal results to humanity of these habits has been less well known, and the strength of the present campaign lies in bringing these truths home to every householder. This campaign is being well conducted. A multitude of agencies are involved in it, and it would rightly seem as though little more than continued effort were needed to bring it to a successful conclusion. And this would be true enough were it not that the fly is itself wholly unconscious of the new dread it has established in the minds of its human victims. The fly can not be abolished by law nor by the dissemination of scientific information concerning it. Its extinction may not be looked for, but its suppression is, in large measure, readily accomplishable.

VARIOUS agencies have, from time to time, issued some simple rules for dealing with the fly nuisance. Those put forth by the Merchants' Association of New York are well worth reproduction. The chief of them are as follows:

Keep the flies away from the sick, especially those ill with contagious diseases. Kill every fly that strays into the sick room.

Do not allow the accumulation of decaying matter of any sort.

All refuse that tends to fermentation should be disposed of or covered with lime or kerosene.

Screen all food.

Keep all receptacles for garbage covered and can cleaned or sprinkled with oil or lime. Follow same treatment for stable manure in vaults or pits.

Keep sewage system in good condition; pour kerosene into the drains.

Screen all windows and doors; burn pyrethrum powder in the house to kill the flies.

Clean up and keep out dirt of every kind everywhere.

Homes of American Artists

By Barr Ferree

"Red Oaks," the Summer Home of John M. Carrère, Esq., White Plains, N. Y.

THE homes of architects are quite apt to have an interest to the inquisitive public somewhat beyond their individual merits. The basis of this belief is obvious: architects, whose lives are devoted to the building of houses and other structures, are popularly supposed to devote the best fruits of their abilities to their personal use. Moreover, in their own homes, the architect may be allowed a freedom in arrangement and design that he rarely has when working for a client. These, and other reasons, doubtless account for the interest such homes excite, although, after all, the simple fact that it is an architect's own house is the most important reason of all.

However curious one may be concerning the homes of architects, criticism is immediately disarmed before the very lovely and altogether delightful house that Mr. Carrère has built for his summer's use in Westchester County. There are few houses anywhere more simple or more delightful than this. Built scarce more than three years ago, its low stone walls seem always to have nestled behind the ancient apple orchard that screens it from the roadway. It is a house that, as will presently be disclosed, combines many successes and advantages; but in no way is it more successful than in presenting an old-time flavor in a modern way. It is, in short, a house that produces the old-time spirit, rather than the old-time forms, and it shows an application of this spirit to modern conditions and necessities in a thoroughly charming way. The success of this designing is much greater than is apparent; for, while the old forms and methods are everywhere abundant and have often been most copiously used, the revivifying of the old spirit is a much rarer art, the rarest, indeed, of modern architectural performances. Mr. Carrère has certainly accomplished this with extraordinary facility and perfect charm in his delightful country home, and this is at once its most penetrating and obvious quality.

Most observers of buildings will doubtless approach this house with sundry preconceptions as to what kind of a dwelling this very successful architect might have built for himself. Whatever these may be they will be quickly dissipated. Mr. Carrère would doubtless vigorously deny the suggestion that this is scarcely the kind of a house he would have built when he returned from Paris—was it twenty-five years ago?—and began the erection of the splendid and stately structures that have made his firm famous and brought him the fine rewards of a brilliantly successful professional career. The point is academic and need not be discussed; it is more pertinent to remark that the creation of a simple old-time American country house in the midst of the matured career of the foremost apostle of the French school in America is a splendid triumph of catholicity in design and a really superb demonstration of the designer's masterful resourcefulness. And to live in this house, and to delight in it shows that, after all, it is pure beauty that is the fascinating aspect of architecture, not the arrangement of grandiose forms or the solving of complicated problems. Of both of these Mr. Carrère's work yields the amplest testimony, yet while these matters are completely absent from his own house it is easy to see that the multitudinous experience of one of the most extensive and most varied architectural careers in this country have been but the preliminaries to the creation of this very beautiful house.

In other words, Mr. Carrère not only knew what he wanted, but he knew how to secure it. It is a fact that should lift the home of every architect from the world of the commonplace and put it in a class by itself. Often enough it does, but I hazard the suggestion that it is seldom so delightfully done as here. The property consists of about thirty-five acres and comprises both open fields and woodlands. It was practically devoid of buildings and there were, therefore, no encumbrances to interfere with the creation of a country estate of moderate size. The house stands back some distance from the public highway, so that little more than its roofs and chimneys are visible above its screen of apple trees. The gardener's cottage is almost directly on the road; to one side is the garage; beyond it is the barn; on the other side, a spacious strawberry field, enclosed behind a picket fence; farther in is the tennis court. The entrance driveway is pleasantly bordered, right and left, with thick growths of rugosa and other roses.

The house is a low spreading structure built in three wings. The first of these, which is nearest the public road, contains the hall, staircase and living-room; beyond it, toward the wood, is the kitchen wing; at the back, and at right angles to the other two, is the third wing containing the dining-room. Of land there was a plenty, and of compact building there was no need; so the house was spaced out upon the land with great ampleness of area, and yet with a keen eye to convenience. The chief rooms are thus not only spacious, but amply lighted by windows of generous size, and they are so related to each other that while each part is convenient of access there is quite a marked sense of isolation that is as rare as it is agreeable.

It is built of stone, rough cut and laid in thick mortar. It is "Red Oaks" stone, since it was blasted out of the ground, and much of it was obtained from the space now occupied by the cellar. It is two stories in height, with a pointed roof containing the attic; in the dining-room wing this is elaborated into "dormitories," a couple of great open rooms in which the beds are separated by curtains and which are delightful camping grounds for the young people of the house and their guests. The roof is thus higher here and is broken by a row of large dormers on either side which do not appear in the other parts.

And the house is all house; that is to say, it is simply walls and openings. There are no architectural features; no emphasizing of parts; no ornamental fronts; no notes of emphasis. Everything is plain and straightforward, directly simple and charming in its simplicity. It is true there is, at the end of the living-room, and hence on the first part of the house as it is approached, a great square porch, enclosed within a wrought-iron railing, with wrought-iron supports, a floor of Welsh tile, and a ceiling of wood painted blue with white beams; a similar porch serves for the carriage entrance, but, save these, there are no external features of any sort.

The windows have sills and lintels of gray stone that so

The breakfast room beside the garden

Steps to the entrance drive

approximate the general character of the walls as to be scarce discernible. The outer woodwork is painted white, the shutters of the first story being solid, with heart-shaped light openings above, while those of the second story have small solid lower panels, and movable upper blinds. All these upper windows everywhere have low iron grilles inserted in their lower parts. There is no cornice, but the eaves project somewhat and are sheathed below with boards painted white. There is a lambrequin-like finish to the gable ends, which with the ironwork of the porches, greatly helps in giving the old-time character to the house. And it stands here, on rising ground, beneath the shade of the great old oak from which the name of the place is derived, as though it had always been here; yet it is a thoroughly modern house designed by one of the most modern of living architects.

The walls are all trellised with wood painted white, and

The hall is square, with paneled walls of wood painted white

Great oak overshadowing the garden

The living-room porch and its floral treatment

will in time, no doubt, be lusciously covered with vines. Already there has been a fine growing of rhododendrons at the base of the house by the entrance roadway, a veritable thicket broken only for the in-planting of two rare old box trees of most unusual form and growth. The drawing-room porch has its own little outer steps by which it may be reached from the roadway. The steps are of flagstones, the platform of red brick laid in herring-bone pattern, and a lion lies asleep on the right-hand pedestal. The house is entered by a glazed vestibule exterior to the house and beneath the carriage porch. The hall is a square room, the walls of which are completely lined with wood in small panels painted white. The plain ceiling has an ornamental centerpiece in plaster, from which depends a bronze hanging-lamp. The fireplace has a mantel of black and yellow marble; with a hearth of the same beautiful stone inlaid

The living-room is lighted on three sides and is finished in French gray

with slabs of white marble; the andirons are wrought-iron. The floor is of oak, as are all the other floors of this story, on which are laid handsome Oriental rugs.

The living-room opens on the right. It is a long, low apartment, lighted by windows on three sides. The walls are paneled throughout to the ceiling in a double series of panels, small below, large above, all painted French gray. The ceiling is white and without ornamentation. The mantel is of polished mottled gray marble, with black marble facings and black and gray marble hearth; the andirons are brass and the screen is wrought-iron. The window curtains are of thin white Swiss, with shades in two tones of buff, a treatment that prevails elsewhere on this floor. Bronze candle lights are applied to the walls, and the furniture coverings are green and red velour and tapestry.

On the left of the hall a small room on the entrance front serves as a library and writing-room. It has a low paneled wainscot of wood painted white, above which the walls are covered with a beautiful tapestry paper in tones of green. There is a molded plaster cornice and a plain white ceiling The whole of one side is completely shelved in wood painted white. Behind this room is a corridor that leads to the service wing. Before these important parts are reached space is found for the stairs to the second story, and a "dust" room, fitted with built-in lockers, where there may be a preliminary cleaning up after a game of tennis.

Directly in face, beyond the hall as one enters it, is a passage which fulfils the function of a conservatory, and which obviously leads to the third wing of the house. It is presently disclosed to be the approach to the dining-room. It is a space that has the distinct quality of a gallery. Three great windows on the right practically occupy all of that wall. There is a low wainscot of wood painted white, and the upper walls are covered with a paper, light gray in tone, of an old-time type, presenting Roman warriors in chariots, framed in small oblongs. This paper, by the way, is used for the halls and corridors everywhere, and is highly effective. The floor is paved with marble, in squares of black and white, with a border of plain white marble. The furniture is of the conservatory type, and is of iron, painted pea-green. In the midst of summer this corridor is, of course, barren of plants; and, hence, a welcome and brilliant color note is furnished by the gorgeous Japanese lantern of embroidered red and blue silk that depends from the ceiling.

The passage to the dining-room

The dining-room at the end is the final apartment in this wing. It is a square room, paneled to the ceiling in wood in two series of panels, disposed between thin pilasters that support the molded cornice. The ceiling is enriched with a central ornamentation. It is a white room, the chief note of color in which is given by the handsome mantelpiece of black and white marble which is built against a large panel in the center of the furthest wall. There are windows on three sides, which approach quite near the floor and are provided with wide sills. There is a central bronze chandelier and side lights, and the furniture is antique, with seat covers of two-toned red velvet.

The windows at the far end open on to the breakfast-room, which is actually an open porch, with square piers of stone, without enclosing parapets at the further end, with but low stone enclosures on the sides with a free opening in the center. It is floored with Welsh tile. All around it are high slim trees, and just beyond is a wall of old stone that separates Mr. Carrère's property from the open fields adjoining.

From the breakfast-room one may conveniently enter the sunken garden that has been developed in the angle formed by the living-room and dining-room wings. In the center is a great square of grass, with rounded box trees planted at intervals and a sun-dial at one end. All around this is a narrow path, then a wide border of flowers, mostly of the old-fashioned type, and brilliantly gay at all seasons, and then a wider path. Another gay border completes the floral embellishment. The paths are lined with narrow pieces of flagstones set upright, and the whole is enclosed within a stone wall, capped with flagstone. At the head of the garden—opposite the house—is the magnificent oak tree that gives its name to the place, and which is one of its choicest possessions.

While all the parts in the first story are very convenient and direct, it is only on the second floor that the really great size of the house is readily apparent. This is due chiefly to the fact that the lower rooms are articulated with the hall, while in the second floor they open on to lengthy corridors, the chief of which are arranged at right angles to each other. There is a longer, freer vista above than there is below, and the house that seemed modest enough in size below develops into a mansion of the first rank in the second story. The triple division that obtained below is preserved above. One wing serves as a guest wing; another is for the use of the family; and the third is for the servants. The bedrooms are everywhere charming, with their ample exposures and pretty wall papers, most of which have an old-time suggestiveness, but which are everywhere decorative in a very delightful way.

"Red Oaks" is so new a property that the ultimate development of the landscape is yet to be done. Even after three short years of growth there are many evidences of permanent improvements. The house has, as it were, so settled down that one who did not know the land before its walls were raised, can not picture to his mind the site without it. The planting near and around the house is ample and well grown. The old apple orchard has been recovered from the damage that time brings to apple orchards everywhere, and is surely as good as new, if not better; for the trees are of lusty growth, and the evidences of disease and decay have been carefully removed. The grass here, beyond the house, is beautifully kept, with a rock or two jutting up above its surface that the under world may be better kept in touch with the miracles the modern architect can create.

The dining-room is wood-paneled and has a handsome mantel of black and white marble

The entrance drive debouches into a great circle beyond the house—arranged for the return of conveyances—and the low stone wall is, within, ablaze with bloom, the simple lovely old flowers that seem the only kind to grow in a place of this sort, and which are so gently, yet so completely, in harmony with the architect's design. Beyond are the woods, wild and woody as every nature-left wood must be. The roadway, that at first is quite new, speedily loses its freshness and becomes a dim old country road, that winds around and through the woods, and which brings you to places quite unexpectedly remote from the house and civilization. There are grand old trees in this wood, and many lesser ones, and quite down on the ground that delightful riot of little things that abound in woods and nowhere else. It is a charming place, and a finer inner screen to the delightful house Mr. Carrère has built for his own use.

The Wild Mushrooms

By Benjamin W. Douglass

HEN the first wet wind of early spring blows through the March woods and coaxes into activity the live things which have lain dormant on the bosom of the earth all winter, the mushroom lover is sure to be about, tramping the woods in search of early specimens of his favorite delicacy. And from that time on until late in autumn he will find many treasures in field and forest which he will carry home to his own banquet board—for the mushroom hunter is essentially an epicure.

From the pussy-willow days till the frosts of Indian summer there is a long season, during which the native mushrooms may be found and gathered, and, to one who really likes mushrooms (and this is essential), there is no more fascinating branch of nature study. There is something primitive about going direct to nature to get something to eat. It touches a chord deep down somewhere in our being which has not been touched since our ancestors wrenched their living from the earth by main force, perhaps with a rifle in early America—or perhaps with a stone axe in early Europe. It is this rudimentary independence which makes most normal men like to hunt and not adverse to killing.

For the novice at mushroom hunting the genus Morchella, to which belongs the common sponge mushroom, will possess the greatest interest. The morels are among the first of the edible fungi to make their appearance in the early spring. The first member of the genus to appear is probably the "half-free" morel (Morchella semilibra). It is tall-growing, bearing a rather small cap at the top of a slender stem. Like all other members of the genus this morel is edible, but is not so highly prized as the Morchella esculenta and Morchella conica, which come a little later in the season—though still early. These two later types differ in shape and size. Both are short-stalked forms, but the latter species bears a cap much elongated. I have found immense specimens of this mushroom which measured nearly ten inches in length. Morchella esculenta has a rounded, compact cap, much smaller than Morchella conica. In spite of its name I

Morchella conica
The largest of the morels

could never see that it was any better to eat than its relatives.

All of the morels are distinctly spring forms, and I do not remember ever having found them after, perhaps, the first of June.

Last season, while looking for morels in a favorite woods I found for the first time the large Gyromitra brunnea. This is considered a rather rare form, and I was interested in investigating it, for it is one of the mushrooms about whose edibility the doctors do not always agree. It is a mushroom of unusual but pleasing appearance. The stem was white in color, short and thick, about two inches in diameter, and of an irregular shape in cross-section. The top or cap was much expanded, and foliated, though not pitted as are the caps of the morels. In some specimens the cap measured seven or eight inches in height, and as much across, and was of a dark reddish color. In texture they were similar to the morels, but seemed crisper and more "meaty." They grew in a row down an old and much decayed log, and there was evidence of a previous crop the same season. This would indicate that this is a rather early form, as at the time of which I am writing the Morchella semilibra had not entirely disappeared.

I ate a few bits of the fungus raw, and was pleased with its fresh, nutty flavor. A friend who is an enthusiastic mushroom hunter told me that he had eaten this same Gyromitra (which he called the lake-colored morel) several years ago, so I decided to try some of the specimens after cooking. After very carefully washing them inside and out with salt water, I cooked the tops for ten minutes in milk, and then thickened them with a bit of flour. The result was a dish of the finest mushrooms that I have ever tasted. They were so good that the entire family ate much more than a normal quantity with no other ill effect than an unsatisfiable desire for more. Cases of "poisoning" attributed to this mushroom are doubtless traceable to the fact that the tops afford hiding places for many small insects which could readily be overlooked unless special care is taken in their preparation. For this very reason the cooking of mushrooms of all sorts is a task with which the ordinary cook should never be trusted. The proper preparation of any fungus for cooking requires care and patience. It can not be done hurriedly and done well, and many cases of sickness following the eating of mushrooms can doubtless be traced to carelessness on the part of the cook. Another class of mushrooms with which a novice can readily and safely become acquainted is that commonly known as the ink caps. These toadstools belong to the genus Coprinus, and they are all edible, though some are more palatable than others. All of them are characterized by having hollow stems and black gills and spores. The gills are the fragile perpendicular plates suspended from the under side of the cap, and in this genus the gills and spores which they contain deliquesce with age, turning to an inky mass. This gives them the common name of ink cap. In the condition of deliquescence the toadstools are, of course, inedible and uninviting, but when they are found soon after coming up they are both pleasing to look at and fine to eat. All members of the genus should be cooked at once.

Morchella bispora
Often associated with M. semilibra

The gray Coprinus grows on dead stumps and logs in moist weather, and is one of the choicest members of the

A common edible puffball

Morchella semilibra, or "half-free" morel

Showing under side of gills of gray Coprinus

Gray Coprinus

Gyromitra brunnea, sometimes called "lake-colored morel"

genus. The brown Coprinus (Coprinus micaceus) is the commonest form we have, and is to be found on lawns around old trees and on decaying stumps from early spring till October. It is an exceedingly prolific plant after a shower, and great quantities of the delicate caps may be gathered along almost any city street. They usually occur at the base of trees or on lawns where trees have recently been removed. Growing in great clusters they usually last but a day, and must be gathered fresh and cooked at the earliest possible opportunity. So handled they are one of the best mushrooms I have ever tasted.

Coprinus comatus — This the "horsetail" mushroom is the largest member of the Coprinus group. The cap, which is scaly, is much elongated and drooping when young, but as it grows older it expands and the edges curve upward. It will be found growing to a height of several inches, and is most common in rich pasture lands. When young the gills are a pinkish white, soon changing to purple and then black—like all of the members of the genus.

Plate of "toadstools" ready to cook

The puffballs, those curious balloon-shaped fungi, with which we are all familiar, form a large family, every member of which is said to be edible. This broad statement, however, is one not to be depended upon too implicitly, for many members of the genus have been but little studied, and there is practically no data on which to base a determination of their character. All of the forms which have been eaten have proved to be good, though some are more highly prized than others.

Agaricus sp. Common in lawns; locally known as the "pink" mushroom

The gigantic puffball, a form measuring up to eighteen inches in diameter, is regarded as one of the best, though I think no better than the common meadow puffball (Lycoperdon cyathiforme), which grows to a diameter of six inches and is one of the commonest kinds. No puffballs should be eaten after the interior has started to turn dark. When cut it should show perfectly white and be firm enough to cut like a loaf of good bread. If its condition is otherwise it should be avoided.

There are several simple ways of cooking mushrooms which can be applied to almost any variety. All members of the Coprinus group are good fried in butter, though they usually lose more in bulk than do other forms. I like the morels made into a batter and fried in small cakes, while the puffballs can be sliced, dipped in egg and fried in much the same manner as French toast. Any of the mushrooms may be cooked in milk till they are tender (ten to twenty minutes), and then creamed by the addition of a little flour. The Coprinus family is also very adaptable to escalloping, and should be treated exactly as you would treat oysters.

The mushroom of commerce (Agaricus campester) grows native over a great portion of the country, and is the most highly prized of all of the edible fungi. It grows in pastures and on rich lawns, but never in the deep shade.

In getting this mushroom care should be used to avoid specimens of the exceedingly poisonous Amanita which it somewhat resembles. It can always be separated from the poisonous form by remembering that the gills of Agaricus vary in color from a pink to a dark brown, while the Amanita has gills uniformly white.

In some localities this mushroom, or one of its varieties, is extensively grown for the market. As a rule they are to be had in the markets and stores of most of our large cities throughout the entire year.

Characteristic structure of Coprinus

A Reclaimed Dwelling

By Paul Thurston

How a Farmhouse at Stokes Pogis, Villa Nova, Pa., Was Reclaimed and Transformed into a Habitable Dwelling

ONE needs not be discouraged if one finds oneself the possessor of a house far out of date and of bad architecture, for an old house is by no means hopeless unless it is absolutely decayed. If one has taste he can transform it into something that will represent his own ideas as to what he likes in the way of a house, and at the same time express his own individuality.

This house was built some one hundred and fifty years ago by the present owner's grandfather, and it may be of interest to mention the fact that General Washington spent one night in it when on his way to Valley Forge.

When Mr. Moro Philips took possession of this little house it consisted of a single stone building, with several additions extending at the rear, as was the custom of the Pennsylvania farmer's house.

The type was one that is frequently seen along the rural highways of Pennsylvania, but fortunately of such a character that the form of the house could be maintained. It was too good to tear down, and when Mr. Philips saw its possibilities for transformation he decided to turn it into a modern dwelling.

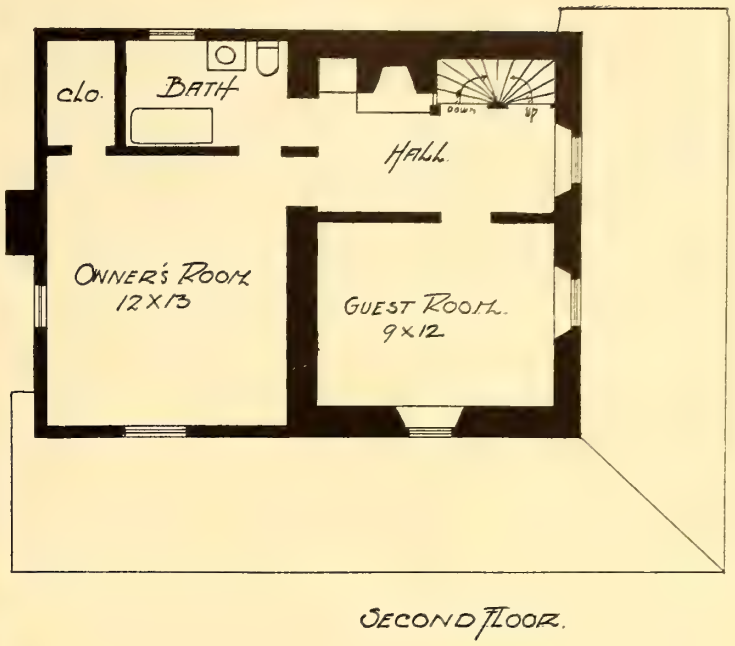
The suggestion presented to express this scheme was to cover the entire building with stucco, and treat the whole with a white cement wash. The blinds were painted an apple-green. The roof was reshingled and stained a gray-green. The piazza was extended across the front and around the side of the house, which not only gave extra outdoor living space, but brought the lines of the house closer to the ground and added a pleasing feature to the general character of the house. The interior was cleaned up, and the only addition which was found necessary was the kitchen built at the rear of the house, and the bathroom on the second floor.

The entrance is directly into the living-room, which occupies one end of the house. It is a pleasant room with a wall covering in plain yellow. Chintz curtains of ecru and old rose are hung at the doors and windows; the latter having softer draperies of muslin against the window panes. The room is furnished with antique furniture and the great chairs on each side of the reading-table are upholstered in chintz to match the draperies. The fireplace is built of red brick laid in white mortar, while the mantel is painted white, the same as the trim.

From the living-room a door opens into the dining-room, which is furnished in a unique manner. The color scheme is lilac-green and white. A lilac-green and white-striped paper is placed on the walls, while the trimmings and all the woodwork and furniture are painted a lilac-green. The chintz curtains of lilac and white are hung over softer ones of white muslin. A closet was built in the corner and another at the side of the room, the latter having open shelves, to hold old blue china and Colonial glass. The dining-table was a relic of the black walnut period and was resurrected from the attic of the old manor house known as "Arrowsmith." This table, together with the simple wooden chairs of Windsor pattern, were painted a lilac-green, in harmony with the woodwork of the room. This makes a very interesting scheme for a simple dining-room, and is what one may have, if good taste is used for a few dollars' expendi-

The house gate with its overhanging privet hedge

An end of a bedroom



ture. The French window, opening from the dining-room to the piazza, which is used in summer for tea, was built in place of the old wooden door which occupied the same place, and was the original entrance to the house. The change gives the dining-room a bright and cheerful appearance.

The kitchen and laundry are furnished with all the best modern fixtures. The woodwork is painted a soft green tone, while the walls are painted a lighter shade.

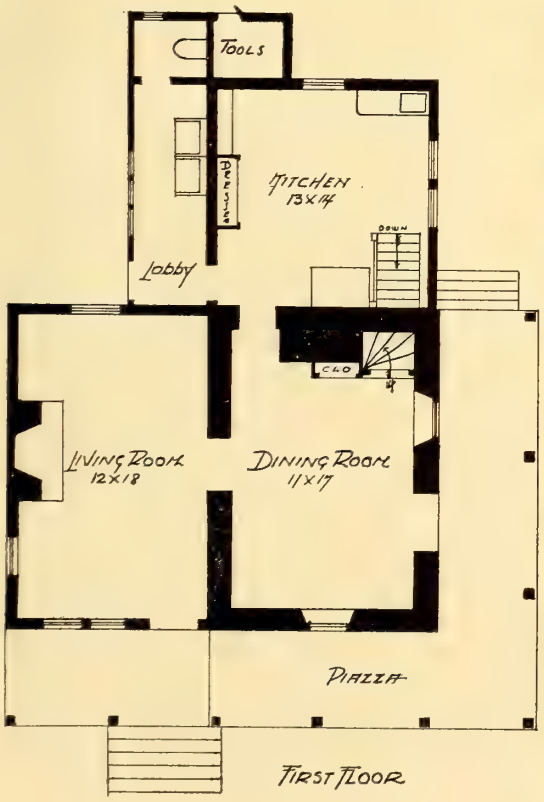
The stairs to the second story rise from the dining-room. The second story contains the owner's room, which is finished in old rose, with furniture of the Empire period. Old rose silk draperies are hung at the windows, while a rug of old rose covers the floor. A door opens into the bathroom, which has a tiled floor and wainscoting, and is furnished with porcelain fixtures and exposed nickelplated plumbing. The bathroom is also reached from the hall, and is within easy access of the guest room on this floor, which is finished with pale gray painted trim and delft blue. Blue silk hangings are hung at the windows.

There is an old fireplace in the upstairs hall and a deep-shelved window-seat.

The servant's room is in the attic, and it is supplied with hot and cold water, which is a very necessary detail when economy of space has to be thought of.

The old picket gateway, with its overhanging privet hedge extending in either direction from it, gives a certain amount of privacy to the house, which is quite close to the road.

The garden is reached from the main porch of the house. It is simply an old-fashioned flower garden. There are walks through and across it, forming square and oblong beds, in which are a profusion of flowers that bloom throughout the season. Beyond the flower garden, and connecting with it, are the vegetable and kitchen gardens. The old house, with its setting of fine old trees and shrubs, need not be considered as a "back number" on account of age, or as unsuited to readaptation to modern requirements, but it must be of such a character as to warrant the installing of all the con-



The house was stuccoed and covered with white cement wash

veniences adapted to modern needs, and this Mr. Philip has very ably demonstrated in the reclaiming of this old house. The artistic and building charm of an old house has an undeniable quality of attractive features which a home of more spacious style and more costly does not possess. It is this distinction of old age that arouses one's admiration, and no building can acquire this fine characteristic save by age itself.

The seeming superiority of the new house is apt to be thoroughly superficial, as it is on a foundation by no means too extensive. Much of this veneer can be applied to an old house, which may thus obtain the combined advantages of the beauty of old age with the excellence of modern convenience, which are to be well considered, for no building is a fit habitation that fails to meet the personal requirements of its owner. The present mode of living and the methods of housekeeping which are now in vogue are so thoroughly different from those prevailing a century ago, that by only a complete renovation can an old house be adapted to modern needs. This, however, need be neither an outward nor a radical renovation, but simply one that brings a long-used house up to date, and in a manner that will meet all the present-day requirements.

The living-room is furnished with antique furniture

The dining-room is treated with lilac-green and white

The most enthusiastic characteristic of the man who remodels an old house into a livable one is reflected in the pleasure he has had in transforming it according to his own fancy, and seeing how cheaply and economically it can be done.

A few years ago an old house such as this was considered to be past redemption, but the rapid increase in the cost of building materials, and the higher wage for the building mechanics, have been the cause of developing every possible means by which a home may be obtained at a small cost.

To those economically inclined, the thought occurred some time ago that an old house, valued by the owner at a nominal price, could be transformed into something more beautiful, and at a very small expense. These ideas have been published in the various magazines, AMERICAN HOMES AND GARDENS included; so that to-day there are many old houses, especially old farmhouses, while of no use in their present state of delapidation, that have become very attractive to the country home-seeker, and especially so when they are surrounded, as in present case, by a splendid setting of old trees.

Curtains for the Summer Home

By Gertrude M. Walbran

ONE of the most difficult problems which confronts every housewife at one time or another is the curtaining of the windows of her home.

To be sure, if one has a full purse, the solution is rendered somewhat easier, but even then the task of getting curtains which are practical, attractive and harmonious with the other furnishings is by no means light.

The gospel of individuality, in both house-building and house-furnishing, is being listened to by an ever-widening circle of home-makers, and to-day we need not feel obliged to have Irish, Arabian or Renaissance lace curtains—as the case may be—at our windows, because our neighbor across the way considers them correct.

In choosing materials for summer curtains one should avoid any fabric which suggests warmth, either in color or weight, turning rather to those materials which are cool and restful.

Many women, seeking something new, overlook the possibilities which lie in the use of well-known materials, and fail to realize that there are any number of pretty and inexpensive curtains which can be made by any one willing to devote a little time and thought to the matter.

First on the list, because of its cheapness, comes scrim. This material can be purchased at prices varying from nineteen to sixty cents a yard, and is forty or forty-two inches wide. It comes in white, ecru or natural color and in three weights, either the fine or medium weight being desirable for curtains.

For very sunny or light rooms one could not choose a more suitable fabric, for while sufficiently transparent it is heavy enough to subdue the strong light. The two sections of scrim curtains shown in the first and second illustrations are delightfully simple, the one showing the open cross-bars entailing a bit more work than the second design.

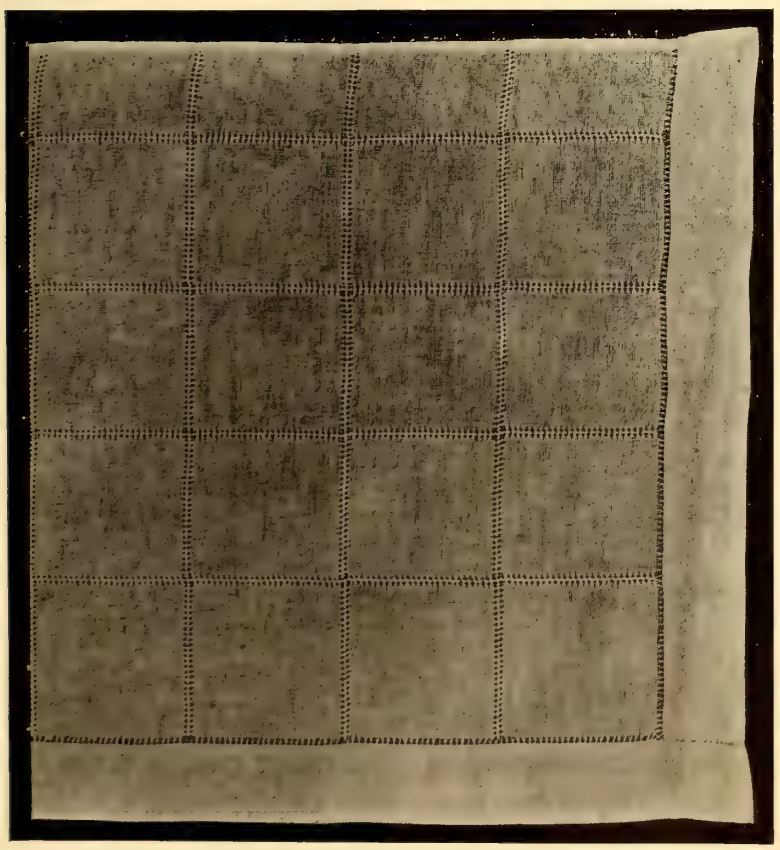
Each curtain has a two-inch hem put in with a row of hemstitching, for which three threads are drawn. The cross-bar lines form blocks three and one-half inches square, and in pulling the threads for these squares it will be found helpful to mark the exact size—three and one-half inches—on a strip of thin cardboard and use this as a measure. Pull one thread at the three-and-one-half-inch line, then skip two threads and pull one more, continuing in this way until all the threads are drawn. Be very careful that none of the threads are pulled beyond the hem, for the latter should be plain (see illustration).

The cross-bar lines are fagoted rather than hemstitched, the work being done over the bar of two threads which separates each open space. Hold the material right side up and, after fastening the thread, pass the needle to the left around three threads above the bar, then around three threads below, continuing in this way to the end of the line.

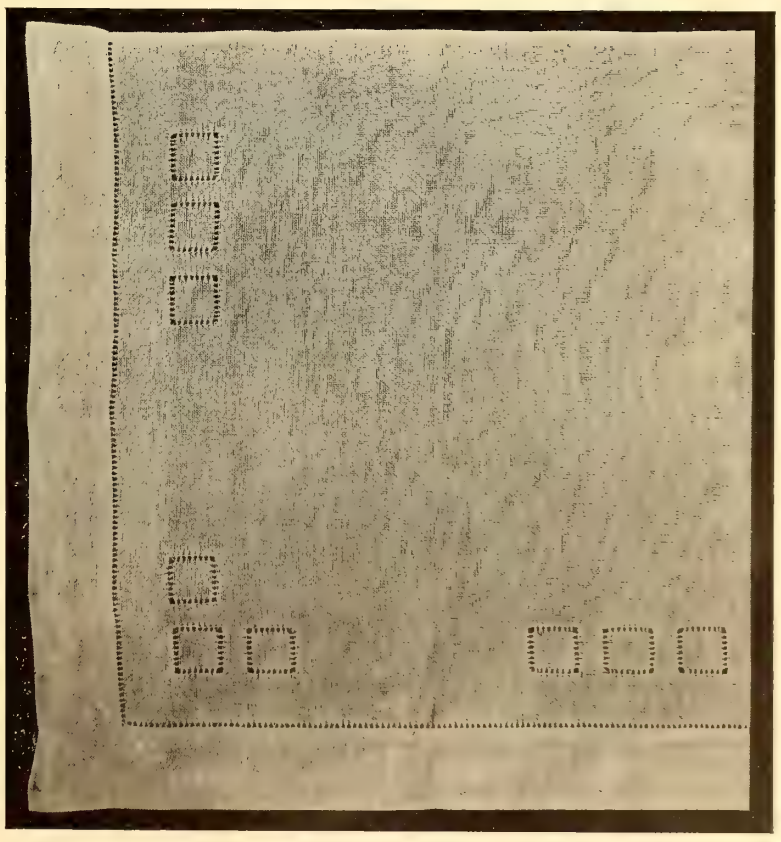
If the windows are narrow the entire width of the scrim will not be required, for the curtains are prettier when somewhat scant. The material that is cut off at one side can be used to supply the threads for the hemstitching and fagoting, thus insuring a perfect match.

The second curtain shows a border inside the hem, formed of groups of one-and-three-quarter-inch squares, three in each group. The squares are placed one and one-quarter inches inside the hemstitching, a one-half-inch space being left between each square, and five and one-half inches between each group.

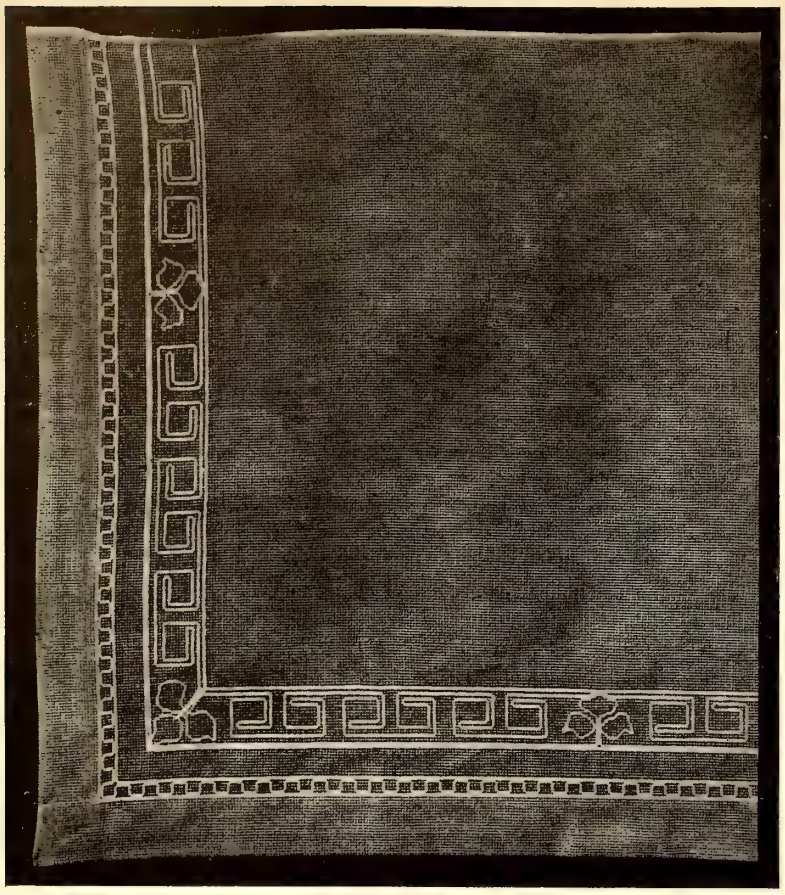
In drawing the threads for the squares, begin with the center square in the corner of the curtain, being careful that the measurements are correct before cutting the threads. Cut a little inside the line, otherwise the threads at the



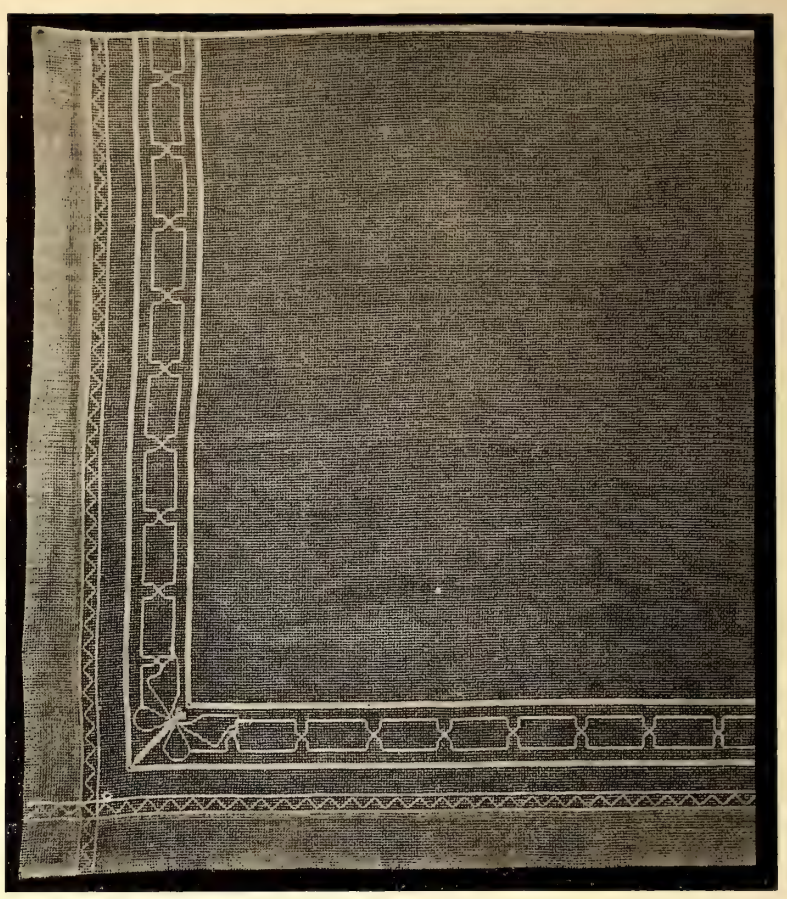
1—Lines of hemstitching forming squares, breaks up the plain surface of the scrim in pleasing fashion



2—A simple scrim curtain, having an inner border of small hemstitched squares worked in groups of three



3—A filet-net curtain, showing a conventional border broken at regular intervals by little tree-like figures



4—A running border which is easy to copy. The darning may be done in white or color

corners can not be buttonholed over, and unless this is done the squares can not be neatly finished. Draw two threads around each square and hemstitch on the wrong side, buttonholing over the corners and trimming off the threads after the square is finished.

Filet net forms the curtains shown in illustrations three and four. This material is also inexpensive, costing from 69 cents to $1.60 a yard, and varying in width from thirty-four to sixty inches. It can be bought in white or ecru, the latter being chosen for the curtains illustrated.

Most of us have seen pieces of the darned net which was such a popular type of embroidery in our grandmothers' day, and these filet curtains make good use of this old-fashioned stitchery. Nothing could be more attractive than the conventional border, broken at regular intervals by the little tree-like figures, of the one curtain, or the simple running design, with the darning-needle in the corner, of the other.

The inability to draw need not deter one from undertaking to work out an original design, for one has only to experiment with a bit of net and threaded needle to be convinced that an endless number of patterns will suggest themselves after a few trials.

5—Curtain fabrics of irrergular weave such as this Sicilian tracery are artistic and also inexpensive

6—Made of wood-brown pongee, the two-inch hem couched down with coarse embroidery silk

Use a loosely twisted cotton floss in rope size for the darning, and in beginning a thread do not make a knot. Instead, take a couple of back-stitches on the wrong side several stitches back of the hole in which the last thread ended; then bring the new thread up in the next space and clip off any superfluous ends.

The hems on the net curtains are one and three-quarter inches wide, the narrow borders about one-half an inch, and the inside bands or borders about one and three-quarter inches wide, one inch being left between the two borders.

Curtains of this stripe are preferably hung next to the glass, and should be rather scant in order to successfully show the worked pattern. Where the woodwork is painted white, it may be preferable to use white net, and if desired the design may be carried out with colored floss to harmonize with the coloring of the room.

The fifth curtain is made of thin, rough-finished silk pongee which can be purchased at the dress silk counter in widths varying from twenty to twenty-seven inches at from thirty-nine to seventy-five cents per yard. If a wider silk is required we must turn to the upholstery department, and, of course, pay a higher price.

The hem—two inches wide—is held in place by a line of couching, four threads of rope silk, the same shade as the curtain, being couched down with a dark thread. In order to cover up the stitches on the wrong side of the curtain, work a second row of couching on this side, taking the stitches so that they come underneath the outer line of couching and are thus invisible.

A most effective cotton material called Sicilian tracery, forty inches wide and costing ninety cents a yard, is used for the sixth curtain. It comes in but two colors, cream-white and a very light blue, and it is in itself so attractive that it requires no other finish than a plain hem.

The Healthiest House in the World

By W. A. Du Puy

THE Tuberculosis Congress, at its meeting last fall in Washington, awarded a prize for the plan submitted for a house which offered most conveniences as an abiding place for men, and at the same time least attractions as a breeding-place for germs. The prize plan for this healthiest house was submitted by Milton Dana Morrill, of Washington, a young architect who has studied much at home and abroad upon the plan for housing the industrial classes in a sanitary manner, and at the same time cheaply.

Plans are going forward for the erection of the prize house in duplicate adjacent to many of the cities that it may stand as an object lesson. The house is of concrete throughout, and is to be molded. It has six rooms on two floors, and in addition a roof-garden. It will cost, after the molds have been made, $1,200. While primarily designed with the idea of offering a favorable place for the residence of those affected with tuberculosis it will be offered when completed as an ideal living place for those who are well and desire to remain so. In addition to which it proffers at a minimum price such unusual conveniences as are included not even in the houses of the wealthy.

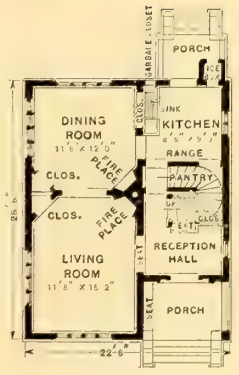
The house is almost box-like in appearance, this form offering the greatest amount of space with the least amount of wall, and being, therefore, most economical. The walls are broken front, back and side, by porches. There are three rooms on the ground floor besides the reception hall. The living-room is 11 feet 8 inches by 15 feet 2 inches; the dining-room is 11 feet 8 inches by 15 feet, and the kitchen is 8 feet 6 inches by 9 feet. Upstairs there are three similar rooms as sleeping apartments, with the bath instead of the reception hall.

The house has the pebble-dash effect on the outside, and is as smooth inside as concrete can be made. There is no paint and papering. The window-frames are of iron, as are the shelves and moldings. The whole when it hardens is one solid stone and absolutely imperishable. Neither fire nor time will affect it, and repairs will never be necessary, as paint and paper do not enter into it. The floors are of a waterproof composition. There is not a corner in the house, as the intersections of all walls and of these with the floor and ceilings are curved so as to offer an oval which harbors no dirt.

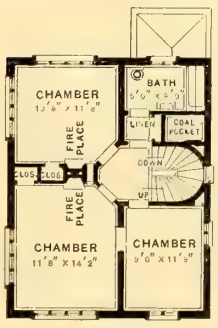
The intent is to use rugs on the floors, as carpets are the greatest breeders of disease. These, together with the furniture, may be shifted from a room, and it may be entered with a hose and flushed thoroughly, as there is nothing which water will injure. Soap and a scrubbing-brush may be added upon occasion, and the whole completely scoured. The floor tips slightly, and there is a pipe arranged for the carrying off of the water.

The roof-garden consists

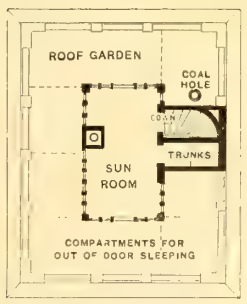
An open-air house



First Floor Plan



Second Floor Plan



Roof Garden

of a sun-parlor, with awnings all round it. Beneath these latter, screens may separate the sleeping apartments of the various residents, and the open-air treatment may be taken in accordance with taste.

The combination of convenience and economy is, perhaps, the strongest feature of the house next to cleanliness. The stove, for instance, marks a great stride in progress. It is intended as a combination coal- and gas-range, water-heater and hot-air furnace. It is argued that it does away with the expensive necessity of a cellar in which to keep the furnace, and with the need of maintaining this latter. The stove is cast in the house when it is molded. The cast-iron for the fire-box, and the necessary ovens and eyes are put in place before the house is cast. About this fire-box is left an air-chamber, and about this is a jacket of the concrete. This latter being a non-conductor tends to keep the heat in that it may serve its purpose and to keep the kitchen cool. Air from the outside is brought through this air-chamber, heated and carried to all the rooms performing the duty of a furnace. Gas is carried into the range, and when summer comes on it may be used in place of the coal, and the whole converted into a gas-range. The ashes from the range shift automatically into a pan which can be reached from the outside and require no handling inside the house.

The ice-box is built into the wall of the house, and has a double front. One of these is on the back porch, and the ice-man may deliver his load without coming into the kitchen. The other is in the kitchen, and through it the housewife may reach her refrigerated supplies. The outside doors may be removed in the winter and the compartment changed into a cold-air chamber, protected on the outside by only screens, and doing away with the necessity for ice. The garbage can also has a similar chamber, which can be reached by the garbage man on the one side or the housewife on the other. The principle is also applied to a china-closet which opens into the kitchen on the one side where the dishes are washed, and the dining-room on the other side where they are used. This double closet saves carrying the dishes both ways.

The house has more conveniences than can be readily enumerated. The stairway, for instance, has a landing between the reception-hall and the kitchen, and may be reached from either side of the house without entering the other side. The coal is hoisted by a simple device to the roof, where it is placed in a pocket, from which it automatically distributes itself throughout the house, and the only thing necessary in feeding a given fire is to work a lever.

All these conveniences are offered in a workingman's house for $1,200, half what it would cost to build as good a house, minus the cleanliness and convenience, of brick. There is never any necessity of carrying insurance, no repairs can be necessary, there is no wear or decay. Its design and the demonstration of its possibilities but mark the drift toward concrete as a building material, and some of the unnecessary follies and inconveniences of the present methods of building.

Trimming Old Trees

By E. P. Powell

THE best time for tackling a neglected orchard is right away. There is no special month when trimming an old tree is peculiarly advantageous. I will do it in winter if that is the more convenient time, or in spring, or in autumn, and just as well in mid-summer—whenever I can give it the most time and care. The only proviso is that the cuts be made so as to shed water, and then painted over; and the small ones might be waxed.

Begin with the smaller suckers, and remove these entirely from the body and the limbs. This will give you a chance to see your work; then cut the dead wood out tidily. Now walk around your tree and study it, and do this several times, until you have well in mind the proportions that you can give it. As far as possible make your cuttings balance—removing large sucker limbs, but leaving a few of the best. By best I mean the most vital, and those placed where they can replace the big dead ones. Understand, all the time, that these big limbs would not have died if these suckers had not been allowed to grow. Do not get in a hurry, but go around your tree and over it again and again, until you have reduced the growth to five or six of what I am calling suckers, but which after this are to be your main limbs. In some cases you can save only two or three, or possibly even one good stout sucker to replace the old top. Of course, if the tree you are handling is not so far gone as I am assuming, you will cut less; but at all events you will remove all the small twigs and the dead limbs.

After this you are to see that no new shoots get an ounce of the life-blood of that tree, or an inch of growth. In the course of three or four years you will have a revitalized tree, ready to yield you considerable fruit. If the main trunk has become badly decayed, tin over the wound to keep out rains, and you still may reconstruct your tree for a few years.

An old pear tree is more brittle, but a single shoot is more likely to make a new top; or at least to bear enough to pay for its ground room. I have an old seckel that gives me bushels of fruit, although it looks like one of Napoleon's marshals, very stiff and very old and very erect. These old pear trees can sometimes be reconstructed from the bottom, if a good stout sucker or shoot can be selected, and trained up for a while; after which cut away the old tree. I have an Anjou of this sort, and an Onondaga. Some varieties are much better than others to rebuild. At least I would not go through an old pear orchard and grub it out unless it had gone very far into decadence.

The best thing to do with old plums is to cut them down and start new ones. The fruit, unless it be from a green gage, does not get size and sweetness. You can grow a new plum or cherry orchard in two or three years, and bring it into full bearing in four. Plums and cherries, as a rule, are short-lived, and will not pay for much fussing. A sucker, understand, in all cases is a shoot, on either limb or body of the tree, that makes new wood at the expense of the true limbs. It must not be mistaken for bearing spurs, which, as a rule, are stubbed, while the sucker is a slim shoot at the outset. Trees are provided with an immense number of dormant buds, and these will always be breaking loose into twigs, and must be watched for and removed at once. Nature has them ready for contingencies, but you must determine when the contingency arises. An apple orchard, planted and fed as it should be, should last in good shape for eighty to one hundred years. I have three apple trees that are one hundred and twelve years old. Pear trees grown as they should be will last even longer. Ten years is long enough for a plum tree, although you can keep a green gage in good bearing shape for twenty.

The Garden Gate

By Ralph de Martin

WHY not? How else is a garden to be separated off from the other land, save by a fence or enclosure, and how entered if there be no gate by which it may be entered? Imaginary boundaries have a certain well-defined impracticability in actual life—if this be the way in which the idea may be expressed—and a garden fence and, above all, a garden gate fills a real purpose that nothing else has done or ever will do. I love a garden gate because it is an impressive symbol that all within it is mine, even if I but rent the place; while without it must stay many persons and animals, some of which, I am frank to say, I do not like.

But I am sure that if one were to collect garden gates the largest estate would not be able to hold them, much less stand them up erect as they should be to fulfil their natural purposes. On the whole, a good thing; for why should my garden gate be like my neighbor's any more than my chairs, curtains, carpets and ornaments? So, first of all, we have the vastest individuality in the garden gate, a plentiful variety, a never-ending dissimilarity, a constant change and variety. Not all of those one sees in an afternoon's walk will be of equal beauty and interest; but one may say the same of the people one passes, so why acquire more uniform goodness in the gates that people make or which shut out their grounds, or lead the way into them, according as one does not know or does know the people whose gates one passes.

Of one thing I am very sure, and that is that the most agreeable people live within the most agreeable gates. I know, of course, that very delightful people often live in the most singular places. There is Philadelphia, for example, or Brooklyn — dear me — jammed to their utmost limits with the most charming and delightful people, fenced within delightful gates, no doubt, but still living in very strange places. I know this, but still I feel very sure that a delightful gate is a true index to the delightful characteristics of the houses behind them. How else could they be delightful—the gates, I mean? At all events, if not a scientific test, it is, to me, a very good one, so good that I take it along on all my rambles, and invariably apply it at all times. I will confess that I regard its value as a test as most successful when I never see nor know the people to whom I apply it.

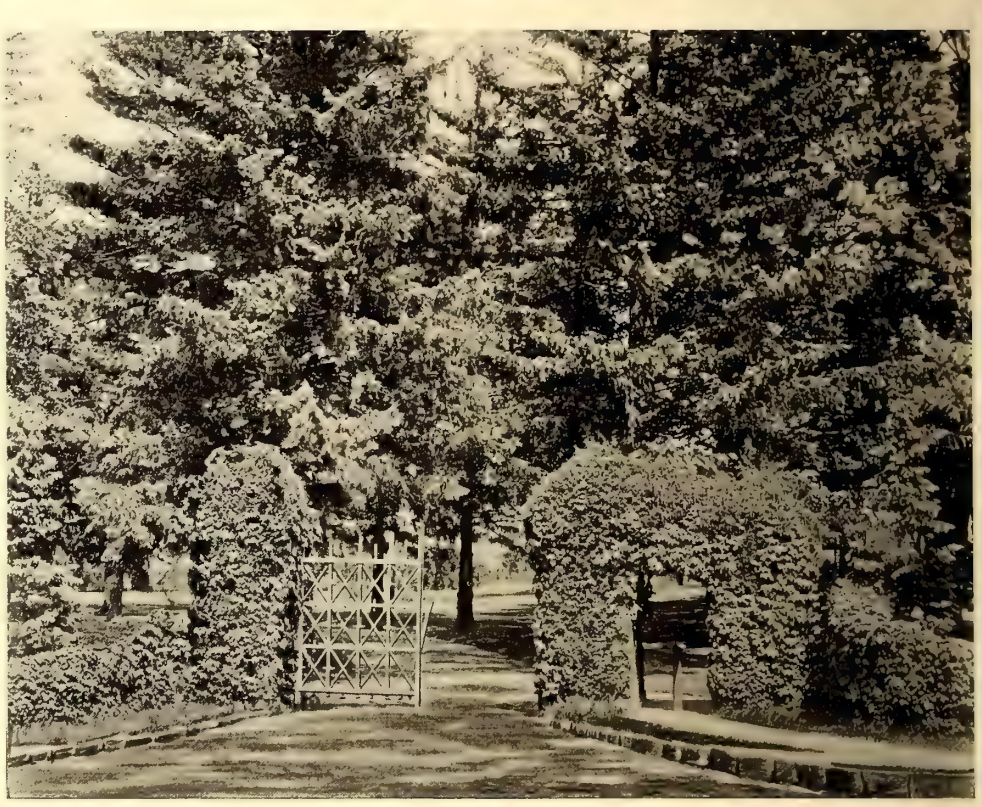
But I must not run along too fast, for sometimes quite forbidden gateways hem in and enclose the most charming places, which house the most charming people. There is a picture among my photographs of a stately country mansion enclosed within a frowning solid wall. The wall does not, of course, frown, for it is marked off with simple piers and relieved with tasteful panels. But I use the figure of speech as an available one; for the wall is severe and solid, with only one or two gateways, barred with gates of upright iron. It happened that when this photograph was taken and when I visited this house there were no vines upon the wall, no decorations or beautyments of any kind. And, if my rule of delightful gates for delightful places were a universal one, then I certainly should not have included this example in my illustrations.

I refer to it to show how deceitful appearances may sometimes be, and how reckless it may be to adopt cast-iron rules and apply them to every possible circumstance. This wall and gate are exactly the kind of wall and gate that are needed here, just the very structures I would get my most delightful friend to provide for his most delightful abiding place. This house, as it happens, is built close to the north shore of Massachusetts Bay. The highway runs so close to the boundary of the property that there is not room for so much as a sidewalk between the road and the wall. It is a narrow bit of land the house stands on, and it was manifestly apparent that a definite boundary between the home grounds within and the high-road without was urgently needed. And so it was built. Not a plain, ugly unsightly wall, but one solid enough, it is true, and the gateways left open for passing glimpses of the remarkably interesting grounds within—as much as could be permitted, no more, no less. There are other fine gates shown.

A great arch built across the roadway

A Colonial gate

Gate in solid walls



Vine-covered gate-posts

Simple and serviceable

Gate and trellis

A friendly seat

The garden gate: a dozen practica

Open roadway with footpath gate

A monumental gateway

An unpretentious gate

A gate in a wall

Simple designs are often effective

How vines may help

xamples of varying cost and design

A Colonial gate

Gate in solid walls

Open roadway with footpath gate

A gate in a wall

Simple and serviceable

Vine-covered gate-posts

A monumental gateway

Simple designs are often effective

Gate and trellis

A friendly seat

An unpretentious gate

How vines may help

The garden gate: a dozen practical examples of varying cost and design

Forest Conservation at Biltmore

By Day Allen Willey

THE most important center of forestry work in the United States, east of the Mississippi River, is Biltmore estate in North Carolina. Here Mr. George W. Vanderbilt located about twenty years ago, and in addition to constructing a large chateau, modeled after those in the Loire Valley, he beautified the surroundings with an Italian garden and other features of landscape architecture. So much has been heard about this country seat that the importance of the woodland culture on the estate is comparatively little known. This, however, is very extensive, covering a large area of Mr. Vanderbilt's lands which comprise about two hundred square miles, or one hundred and twenty-eight thousand acres, of the mountain country of western North Carolina. Such has been the progress of forestry here that the estate presents a most valuable and interesting object lesson in the preservation of the woodland, the care of the tree, the foresting of barren ground and systematic and economical lumbering. Consequently the fire which has recently destroyed a portion of the forests can be called a calamity, as it burned over no less than twelve thousand acres of woodland, including a large territory which had demonstrated the success of planting hitherto worthless land with valuable trees, such as the poplar.

The forest in the neighborhood of Biltmore is on a broad plateau, having an elevation of two thousand three hundred feet, and is similar in composition to the forests of the upper portion of the Piedmont Plateau region, which abuts upon the Allegheny Mountains in the Southern States. The forest is characterized by scattering tall pines—short-leaf pine and pitch pine—and abundant hardwoods, in which white oak, yellow oak, Spanish oak and post oak are the prevailing species. Among the minor species, chestnut, black gum, pignut and mockernut hickories, are numerous in the ravines, while along the streams are river birch, red maple, sycamore, shingle oak and black walnut.

In the mountainous portions of the estate, between the elevations of two thousand three hundred and five thousand feet, the forest is also made up of hardwoods, but different species predominate. The most common trees are: chestnut, scarlet oak, white oak, tulip, chestnut oak, and red oak. The minor species, in order of their relative abundance, are: hickory, black gum, basswood, sourwood, black locust, butternut, ash, buckeye and hard maple. Short-leaf pine occurs frequently on the dry ridges, and along the streams there is considerable hemlock. White pine is occasional beside the streams and in swamps. Between the altitudes of five thousand and six thousand feet the forest is usually composed of balsam and spruce. On the higher mountains of the estate the hardwood forest is dwarfed and stunted, and some of the mountain tops are entirely treeless. On the Biltmore plateau and at the lower elevations in the mountains the abandoned field forest is usually composed of pine, while at the higher elevations in the mountains, it is chiefly a tulip forest. Within the boundaries of the Biltmore estate one may find forest conditions similar to those of the Southern States, exclusive of the coastal pine belt, of the Middle Atlantic States and of the northern New England States.

Consequently Biltmore presents opportunities for studying and experimenting with a forest growth of a great variety, since so many different kinds of trees are contained within its limits.

It is an interesting fact that Gifford Pinchot, the present head of the National Forest Service, began his first important work at Biltmore and originated the system which has since been carried out. He was succeeded by Dr. Carlos Schenck, a forest expert of international reputation, who, aided by Dr. Claude Howe, has developed the work on broad lines, so that to-day Biltmore is undoubtedly the best illustration of forest conservation which can be found in America, although it is entirely independent of national control. The men employed in the various activities are almost entirely mountain whites of the South, but have been trained so that they may be considered experts in the various occupations. Many of them have homes in the forests, and practically devote all of their time to the work. This not only includes the clearing of the underbrush, the planting and cultivation of seed beds, but nursery work of every kind, such as transplanting seedling trees and packing them for transportation, as a branch of the industry is a nursery from which the annual output averages two million young trees of species suitable for ornamental purposes and forest growth. Such has been the success in nursery work here that the products have been shipped to many portions of the United States; and the tree nurseries alone cover one hundred acres.

Only about fifteen thousand acres of Biltmore consist of open or clear land, the balance being more or less wooded, while the variety of the trees available for lumber is so great that the forests form a most important source of revenue in this respect. The Pisgah forest, as it is called from being located upon the foothills of this mountain, contains sixty-eight thousand acres alone, but forms only a small section of the area suitable for lumbering. Therefore, the lumber industry is one of the most important and extensive at Biltmore, while the methods of work have been noted for the economy in time and labor saving, so that the expense of felling and getting out trees and converting them into commercial tim-

Bridge building on the Biltmore estate

Young foresters getting the value of logs

ber has been very low in cost. This industry has been conducted along the most improved principles of forestry, care being taken only to select trees which, from their size and location, would interfere with the growth of younger trees. The dense thickets on many parts of the estate and the great area of woodland have rendered it necessary to cut down a very large quantity of first-growth timber in order to give space for second-growth timber and small trees.

The lumbering system has required many miles of snaking roads—forest openings through which the logs could be hauled to the main road or to the mill. All of these have been built by the Biltmore employees, and are located upon grades wherever possible, so that the advantage of gravity can be taken in hauling logs from the woodland. Practically all of this forest product is sawed into commercial timber on the estate, as a large steam sawmill, also a planing-mill have been installed especially for this purpose. The income from timber alone has been so large that the plans carried out by the forester and his assistants have well repaid the expense of the system in addition to the benefit to the younger forests, while a large area within this zone has been planted with young trees where none has before been grown.

Other features of the industry at Biltmore include the cutting of fire-wood. Nearly three thousand cords of this fuel are sold yearly, coming from trees which are deemed valueless for commercial timber. The cord-wood comes from a tract of eight thousand acres, so situated that the material can be readily hauled to Asheville and neighboring towns. Another source of revenue from the forests is bark from the chestnut oak, of which about fifteen hundred cords are secured yearly, supplying a plant which manufactures tannic acid. The growth of chestnut wood is such that the estate also furnishes fifteen hundred cords of this for making chestnut extract. In short, the income from the forest industry is so large that it more than balances the expense of caring for the woodland in spite of the large force of men needed. One of the principal items of revenue is lumbering, a large sawmill being located upon the estate to convert the timber into boards, planks and other building material.

One of the most interesting features is the success which, as already stated, has been attained in foresting worthless land such as abandoned farms and clearings. This was taken up several years ago, and up to the present time about two thousand acres of abandoned fields within the Biltmore forest have been covered with forest plantations, and the

The havoc wrought by fire in a forest

A ruinous fungus growth

process is still being carried on at the rate of one hundred acres planted yearly. The plantations are composed chiefly of white pine and short-leaf pine with a mixture of oak and hard maple. Experimental plantations of tulip, black walnut, black locust, ash and cherry have been made. The young trees for the plantations are raised on the estate.

Transporting bark from Biltmore forest to the tannery

In connection with the Biltmore forest service is a school of forestry which is open to young men of good character. It is the most important private forestry school in America. A specialty is made of field-work, and the students play a most important part in measuring timber lands, lumbering, operating the sawmill and the planing-mill, seeding and tree planting, also in the nursery. All of this forms a portion of their out-door instruction while the lectures and study include a very complete course in sylviculture, the business of forestry, the quality and variety of the tree as well as so-called timber cruising and log and timber measurements. This also embodies surveying in all its branches. A large mileage of the lumber roads which have been constructed at Biltmore represent the surveys by the forest school.

Again referring to the destruction by fire, it should be said that the spread of the flames was prevented only by the efforts of the mountaineers not only on the estate but in the vicinity who showed their friendship for the owner in this way. Three hundred men are employed at Biltmore, and this force, with the students and the neighboring mountaineers, greatly assisted in extinguishing the fires,

Digging trenches to check a forest fire

but one of the best sections of the woodland was entirely ruined, representing a work which has been in progress for the last twenty years. It is what is known in forestry as the regeneration of the poplar tree, and the success of the foresters had attracted attention to it throughout the United States. It must be said that the fire was the work of incendiaries, strange as it may seem. Although the object lesson which Mr. Vanderbilt has furnished the Southern people, and especially mountain folk, in his model farm, forests, dairy-work, and other features have been widely appreciated and have proved of much educational value to the South, he has had enemies like others who have tried to better their fellows. In purchasing lands to add to the estate he has at times been obliged to have the property appraised on account of the exorbitant price charged by the owner, and in this way has aroused

A fire that started in burning pine stumps

enmity in some quarters. It is believed that the fires were started by persons of this class, and the vandalism has aroused a strong feeling of indignation in the vicinity.

Relative to this Biltmore disaster and the menace of fire to forests in general, Dr. Carlos Schenck, the chief forester of Biltmore, gives the following statement:

"Nothing can be more welcome to

me, at the present time, than public attention drawn to the needs of the forest with reference to forest fires. If you solve the problem of forest fires you solve, at the same time, the problem of American forestry. Nature re-establishes, with great force, a second growth wherever the first growth has been cut by the lumberman. Nowhere on earth, where forests now exist, is it possible to annihilate the forests without the help of either fire or the plow. Indeed, as soon as the plow stops work the forest returns.

Dr. Schenck, head forester at Biltmore, in one of the forests he has created

"In western North Carolina incidents are frequent where abandoned fields have obtained an excellent second growth coming up from self-sown seeds, for the simple reason that the wooden fences surrounding the old fields were protected by the farmers from fire. Sylviculture in America is out of the question until forest fires are fully controlled. What is the use of the investments in second growth (sylvicultural investments) as long as these investments are almost sure to be destroyed by fires? The lethargy of the people with reference to forest fires is somewhat amazing. Obviously, the suppression of forest fires means the establishment of a forest police, and the enactment of more stringent laws, similar to those preventing the firing of prairie lands.

"As regards the species of trees destroyed by forest fires, I would state that the white pine and the hemlock are most sensitive. The long-leaf pine and the short-leaf pine are immune from a relatively early age on. Obviously, the hardwoods, which have the ability to sprout from the stump and to heal scars readily, are not so easily damaged by fire as are the white pine and the hemlock; on the other hand, the hardwoods are more easily wounded and scarred. Whilst the softwoods are apt to be killed by fires, the hardwoods are apt to be injured for life, as through the scars inflicted by fires on the hardwood trees, fungi and insects enter into the bodies of the trees. The smaller the tree, the more susceptible is it to damage or death from fires. Unfortunately, the more valuable species suffer the most from forest fires.

"The area burned over on the Biltmore estate recently comprises twelve thousand acres. On this area all of the young growth, the product of fifteen years, has been annihilated, and among it some of the finest—perhaps the finest—yellow poplar (tulip tree) existing in the world. The tulip tree seedlings are particularly sensitive, and when killed by fires are not in the habit of sprouting from the stumps, which quality is possessed by the chestnut, the locust and many other hardwoods. In the end, the fires were mainly checked by rain. The flames were so widespread and the wind so fierce that human efforts alone could not have saved the forests. In battling against forest fires the first principle is to abandon the burning districts and to start backfires from vantage points—clearings, brooks, farms or roads.

Railroad building in a Biltmore forest

Screen for young trees to be planted on Biltmore barrens

Small Houses of Small Cost

From $3,500 to $4,500

By Francis Durando Nichols

THE increased cost of living and the higher rentals are making it prohibitive for one of modest means to live within the city limits. This is especially true if a man has a family of children, which he desires to surround with a healthful and moral influence in order that they may grow up to be useful and desirable citizens.

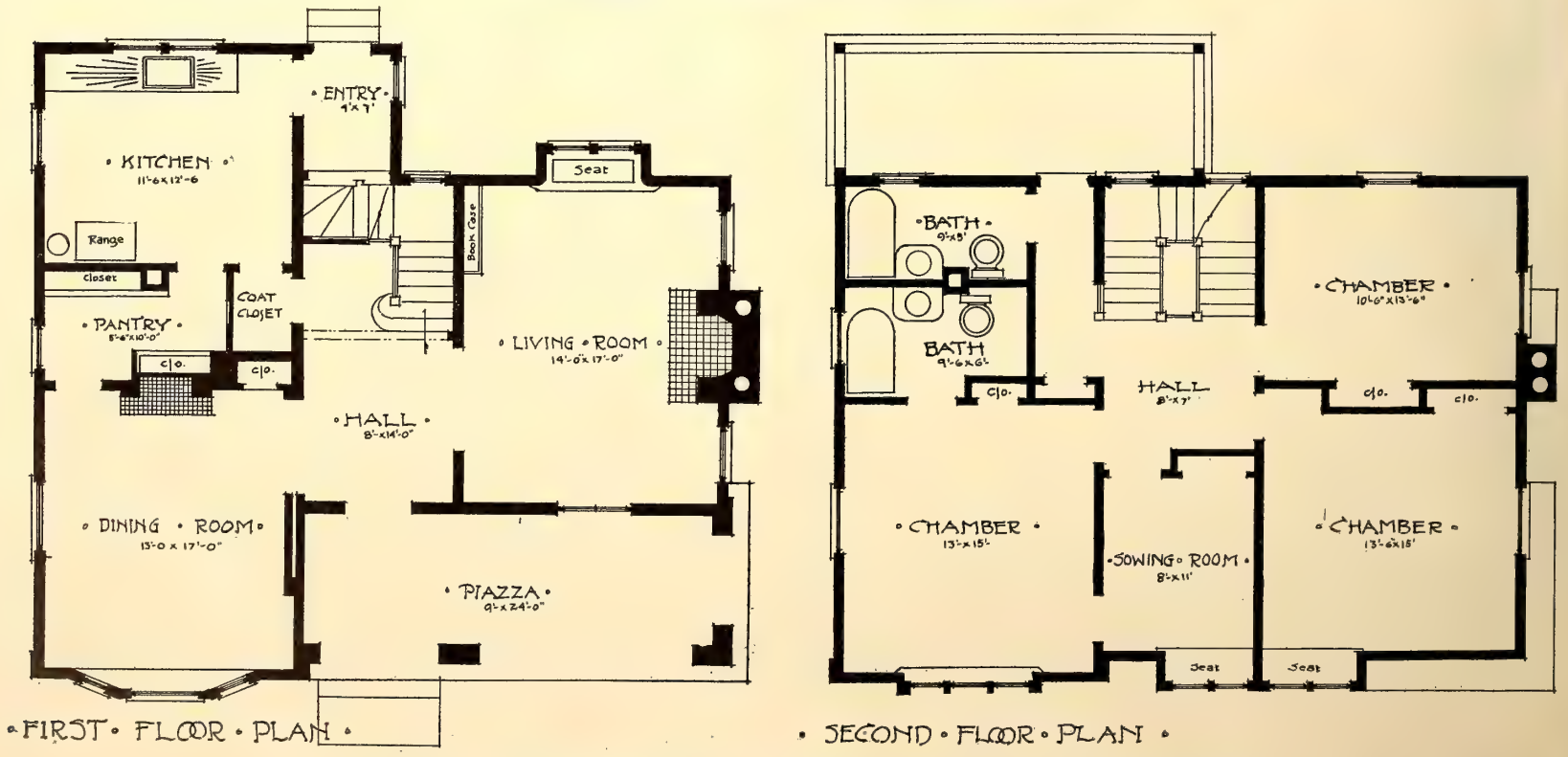
The first question to be considered, however, is, Where shall one go to live? The suburb selected must be within communicating distance from the city; it must contain good schools and churches; and above all, it must be sanitary and healthful. The site selected in a particular suburb should be within ten minutes' walk of the station. These two points disposed of, the next question is, What can we build for from three to five thousand dollars?

A few years ago very little attention was given to a house costing this amount of money, and the man wishing to spend three, four or five thousand dollars was given very little choice in the selection of the style of house he was to have. The house was to contain so many rooms, which were to be enclosed with four walls, and the whole covered with a roof, and this is as far as he was permitted to go. To-day, the situation is quite different, for the vast amount of literature which is being published on the subject of house-building has been the means of teaching the average man that he has a right to express in the design of his home some of his individuality, and the architect selected by him is bound to respect his wishes and carry out, so far as is possible, his ideas as to what he wants in the way of a house.

The group of houses illustrated in this article were built at Scarsdale, N. Y., and are representative types of the best modern small houses. They are the work of Mr. William S. Phillips, architect, of New York City.

1—The design of Mr. Cowle's house is of English character

The first house (Figs. 1, 2, 3 and 4) was built for Mr. A. G. Cowle, and is designed in the English style. The exterior is of rought gray stucco and brown stained shingles. The bay window and small lights, with their frames painted white, are the chief characteristics of the whole building. The plan shows a central hall, which is trimmed with English oak. It has an ornamental staircase. The living-room is also trimmed with Eng-



2.—The first and second floor plans of Mr. Cowle's house are most convenient in their arrangement

3—The dining-room is trimmed with oak and its walls are covered with tapestry paper finished with a plate-rack

lish oak, and has a brick fireplace with cobbles for shelf. The dining-room has a fireplace with a craftsman mantel and tile facings and hearth. The walls are covered with a tapestry paper to the height of seven feet, at which point a plate-rack extends around the room. A bay window at the front forms a place for flowers. The kitchen and the service end of the house are most complete. The second floor contains three bedrooms, sewing-room and two bathrooms. The servants' rooms and trunk room, are placed in the attic. The cellar contains a heating apparatus, fuel rooms and laundry. The bathroom is furnished with a tiled floor and imitation tiled wainscoting and porcelain fixtures and exposed nickelplated plumbing. The woodwork of the second floor is painted white, and the walls are treated in one particular color scheme.

One of the most interesting houses in the group is that belonging to Mr. A. D. Smith (Figs. 5, 6, 7, 8, 9, 10, 11 and 12). The design is distinctly English in character. The underpinning is built of rough fieldstone, while the superstructure is of stucco. Small lighted windows and a hooded entrance help carry out the effect sought. The gray of the stucco walls, the white-painted trim and the green-stained roof form a very happy color scheme.

The hall, reached from a vestibuled entrance-porch, is trimmed with cypress, finished in an artistic manner, with a sufficient amount of brown stain to give it a soft effect, and at the same time preserve the grain of the wood. This hall leads directly into the living-room and dining-room, and also open onto the living-porch at the side of the house.

The living-room is trimmed with cypress, and has a large bay window at the side of the room, opposite the entrance, and another bay window at the front of the room provided with a window seat. The fireplace has a craftsman mantel with tiled facings. Seats are built in on either side of the fireplace. The walls are covered with two-toned mustard-yellow wall covering. The hangings are of greenish-yellow in tone, and the whole color scheme of the room is most effective and artistic.

The dining-room has a French window opening on to the living-porch, and making it within easy access to the kitchen, so that it can be brought into service in summer for dining uses. The trim is of English oak, and the wall is covered with a green wall covering of an effective shade. The kitchen and pantry are fitted up complete.

4—The craftsman fireplace and mantel is the chief feature of the dining-room

5—Mr. Smith's house is of English style

Small Houses of Small Cost

6—The living-room bay

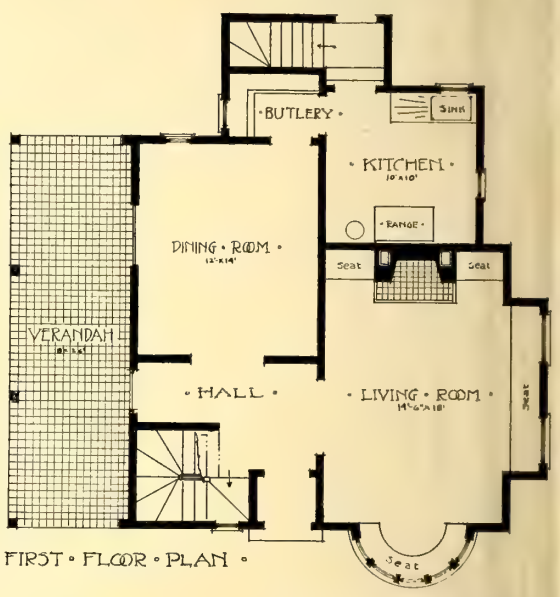
The second floor contains three bedrooms and a bathroom, with imitation plaster tile walls, and porcelain fixtures and exposed nickelplated plumbing. The third floor contains one servant's room and a trunk room. The cellar contains a laundry, fuel room and heating apparatus.

Mr. J. de Morrini's house (Figs. 13, 14 and 15) is constructed of stone for the underpinning and stucco for the remainder of the building. The roof is shingled and stained red. The entrance to this house is directly into the living-room. The latter is trimmed with oak, and the important feature of the room is the inglenook with its open fireplace with tile facings and hearth, and its paneled seats on either side of the nook.

The stairs lead up from the passageway between the living-room and the dining-room, and are of the mission style. The dining-room is of simple style, and is connected with the kitchen by the butler's pantry, which is fitted up complete.

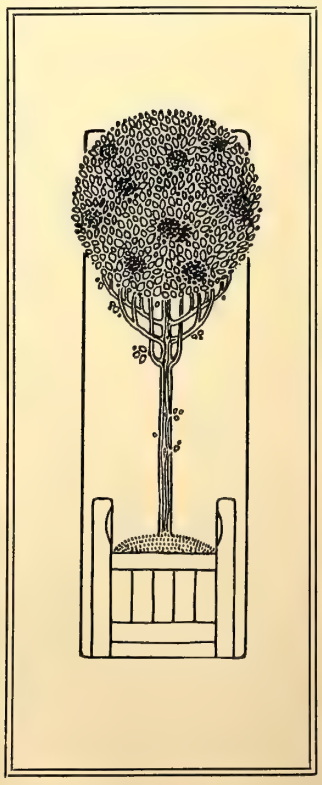
The second story contains three bedrooms and a bathroom; the latter having a tiled floor and imitation tiled wainscoting, and is fitted up with porcelain fixtures and exposed nickelplated plumbing. A servants' room and ample storage space are provided in the attic. The heating apparatus, fuel rooms and laundry are placed in the cellar.

Mrs. Turner's house (Figs. 16, 17 and 18) is also of the English style with the addition of half-timber treatment. The underpinning is built of red brick laid in white mor-



8—The house is entered through a vestibuled porch

10—French windows in the dining-room open on the living-porch



11—The hall shows a compa

indow has a paneled seat

Costing
from
$3,500
to
$4,500

7—The living-porch is placed at the side of the house

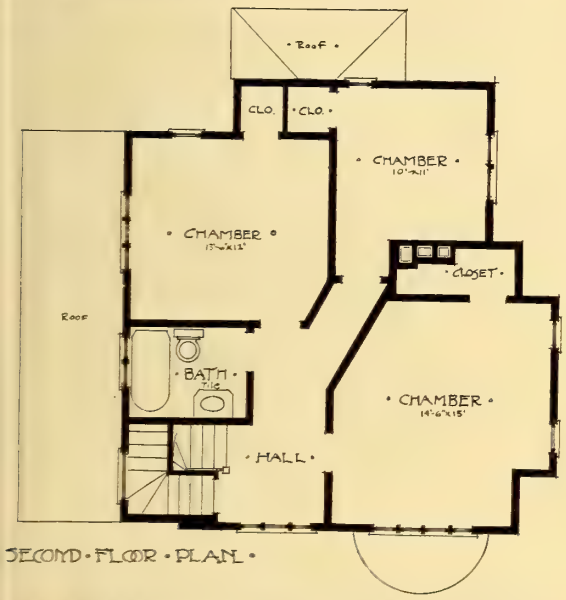
tar, while the remainder of the building is of rough plaster. The trimmings are half timber-work, are stained a soft brown, and the shingled roof is stained with a moss-green

The entrance opens into the hall, forming a recessed porch. It is trimmed and finished in a soft brown, and it has a craftsman staircase.

The living-room is finished in a similar manner and has a beamed ceiling and an open fireplace with tiled facings and mantel. The dining-room has a plate-shelf holding old blue and white china. The kitchen has a cement wainscoting and a complete equipment of fixtures.

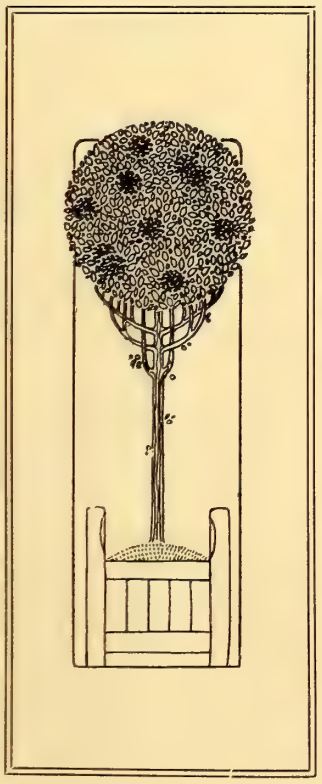
There are three bedrooms and a bathroom on the second floor; the latter is wainscoted with imitation tile in cement and is furnished with porcelain fixtures and exposed plumbing. There is one servants' room and a trunk room on the third floor, and the cellar contains the heating apparatus, fuel rooms and laundry.

The uppermost thought in the mind of the architect in designing these houses, was that there were many families, small in number, of refinement and good taste who wanted and would appreciate a house that was artistic and distinctive, and at the same time equipped with everything practical and complete in all the essentials which make modern housekeeping a pleasure when arranged with an idea of convenience. A study of the plans of each of these houses will show that they have been arranged with this view.



9—The bedrooms are well arranged for light and air

arrangement of stair space



12—The feature of the living-room is the craftsman fireplace

5—Mr. Smith's house is of English style

Small Houses of Small Cost

Costing from $3,500 to $4,500

6—The living-room bay window has a paneled seat

7—The living-porch is placed at the side of the house

The second floor contains three bedrooms and a bathroom, with imitation plaster tile walls, and porcelain fixtures and exposed nickelplated plumbing. The third floor contains one servant's room and a trunk room. The cellar contains a laundry, fuel room and heating apparatus.

Mr. J. de Morrini's house (Figs. 13, 14 and 15) is constructed of stone for the underpinning and stucco for the remainder of the building. The roof is shingled and stained red. The entrance to this house is directly into the living-room. The latter is trimmed with oak, and the important feature of the room is the inglenook with its open fireplace with tile facings and hearth, and its paneled seats on either side of the nook.

The stairs lead up from the passageway between the living-room and the dining-room, and are of the mission style. The dining-room is of simple style, and is connected with the kitchen by the butler's pantry, which is fitted up complete.

The second story contains three bedrooms and a bathroom; the latter having a tiled floor and imitation tiled wainscoting, and is fitted up with porcelain fixtures and exposed nickelplated plumbing. A servants' room and ample storage space are provided in the attic. The heating apparatus, fuel rooms and laundry are placed in the cellar.

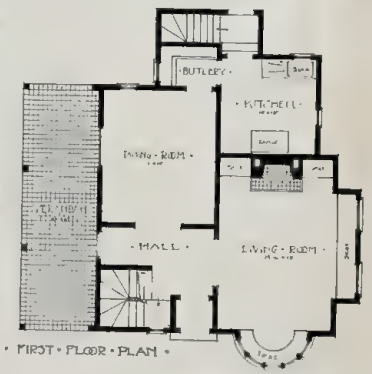
Mrs. Turner's house (Figs. 16, 17 and 18) is also of the English style with the addition of half-timber treatment. The underpinning is built of red brick laid in white mortar, while the remainder of the building is of rough plaster. The trimmings are half timber-work, are stained a soft brown, and the shingled roof is stained with a moss-green

The entrance opens into the hall, forming a recessed porch. It is trimmed and finished in a soft brown, and it has a craftsman staircase.

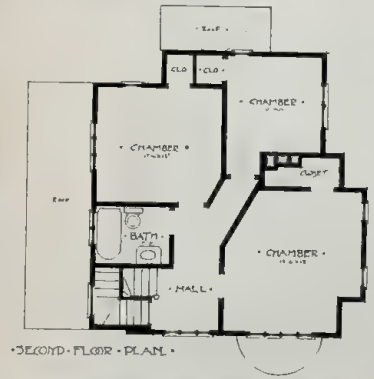
The living-room is finished in a similar manner and has a beamed ceiling and an open fireplace with tiled facings and mantel. The dining-room has a plate-shelf holding old blue and white china. The kitchen has a cement wainscoting and a complete equipment of fixtures.

There are three bedrooms and a bathroom on the second floor; the latter is wainscoted with imitation tile in cement and is furnished with porcelain fixtures and exposed plumbing. There is one servants' room and a trunk room on the third floor, and the cellar contains the heating apparatus, fuel rooms and laundry.

The uppermost thought in the mind of the architect in designing these houses, was that there were many families, small in number, of refinement and good taste who wanted and would appreciate a house that was artistic and distinctive, and at the same time equipped with everything practical and complete in all the essentials which make modern housekeeping a pleasure when arranged with an idea of convenience. A study of the plans of each of these houses will show that they have been arranged with this view.

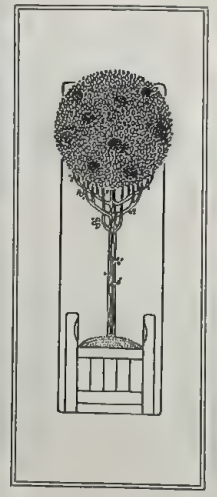


8—The house is entered through a vestibuled porch

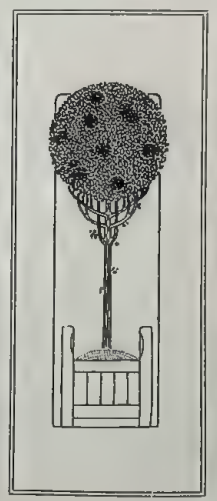


9—The bedrooms are well arranged for light and air

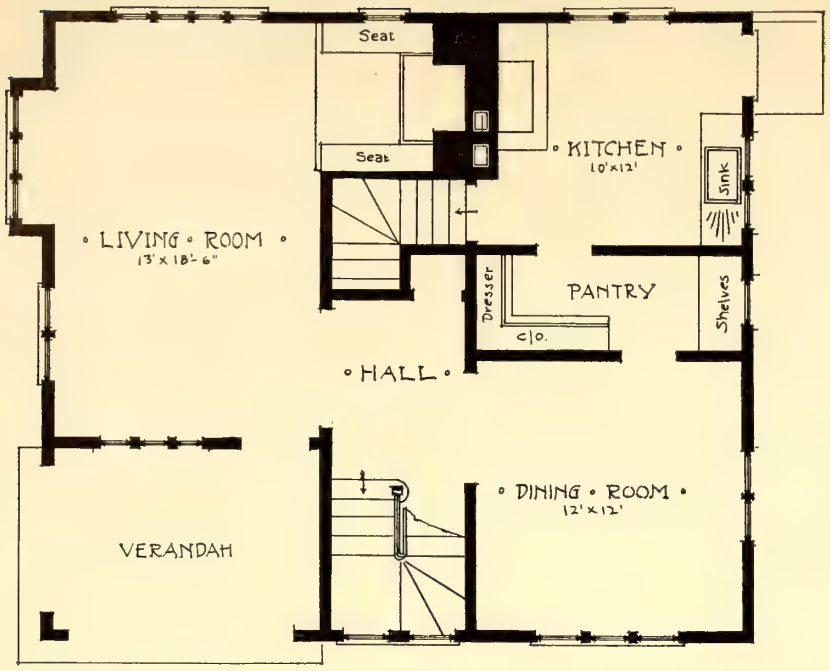
10—French windows in the dining-room open on the living-porch



11—The hall shows a compact arrangement of stair space

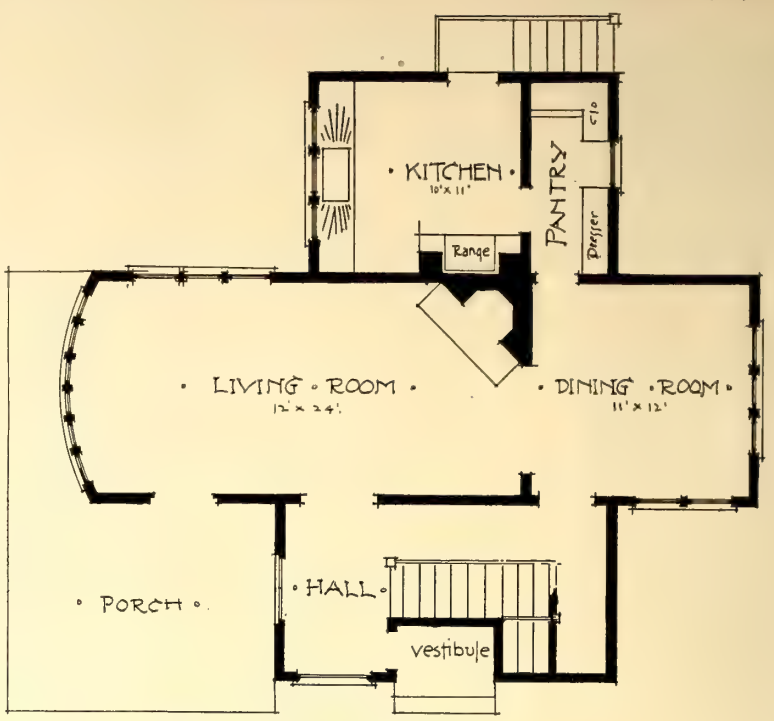


12—The feature of the living-room is the craftsman fireplace



FIRST FLOOR PLAN

13—The living-room of Mr. Morrini's house is entered direct from the porch

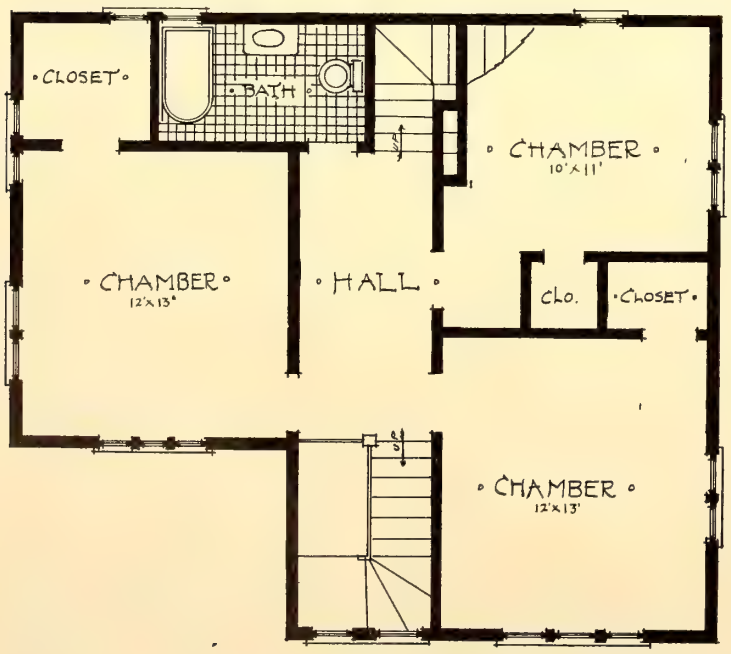


FIRST FLOOR PLAN

16—Mrs. Turner's house has a pleasing arrangement of living-rooms

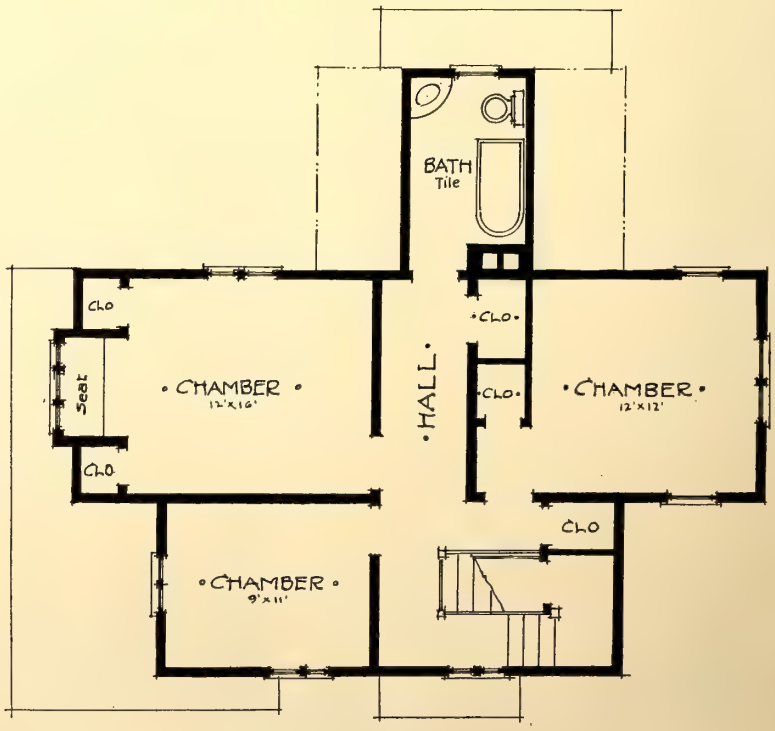
14—Mr. Morrini's house is interesting in its style

17—Mrs. Turner's house is of half-timber work and stucco



S.ECOND FLOOR PLAN

15—The sleeping-rooms in Mr. Morrini's house are well arranged



SECOND FLOOR PLAN

18—The second floor of Mrs. Turner's house is economically planned

"Glenbrook," A Naturalistic Garden Designed by Its Owner

By Adam Synder

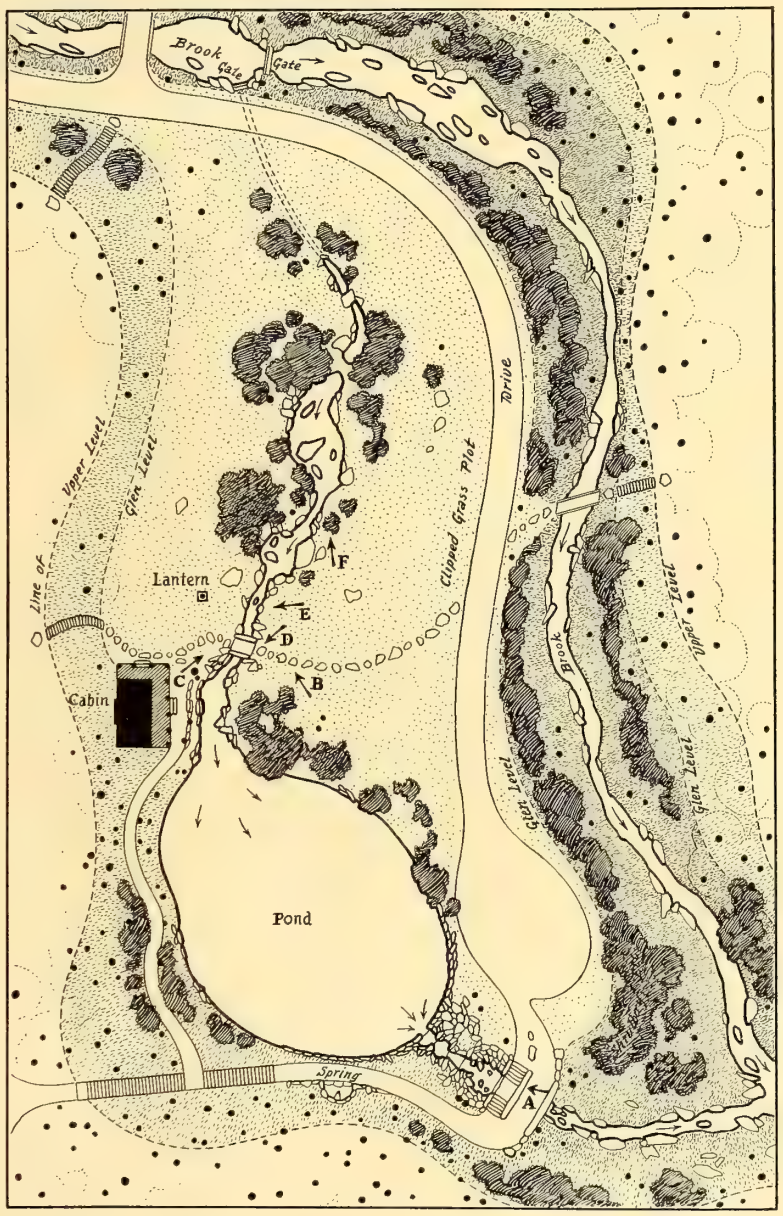
WHEN a man is engaged in business, wears good clothes and keeps his hair cut, talks politics, and rides behind excellent horseflesh with keen enjoyment, we hardly expect him to waste much time with the construction of a garden from the pure love of the thing. Although he may be the best of genial company, he will rarely give a hint of his other self. Too many gardens owe their existence to the fashion, rather than the extreme pleasure their construction and existence afford.

In the owner of "Glenbrook," a garden at Newburgh, N. Y., however, one comes in contact with just such a man. And yet it would hardly be fair to pass lightly over the feminine influence in this beautiful little work. It is fitting that the hand of the wife should be felt in this direction.

"Glenbrook" is neither large nor elaborate. It is the adaptation of natural conditions by artificial means, with very naturalistic results. The glen in which it is situated, and which it fills, is fringed with oaks, and is thus screened from the rest of the landscape. One is not aware of its existence from any outward suggestions. The glen itself was probably formed by the brook which passes through it, in some remote period, when the flow of water was considerably greater than at the present time.

Given a glen of perhaps an acre and a half, of approximately a rectangular shape, a brook entering at one corner, traversing two sides and leaving by the opposite diagonal corner, the natural process would be to devote one's attention to the brook as a feature, for its entire length within the glen. The spring freshets, however, had worn a deep gully at the bottom of which the normal summer brook flowed, and thus it was naturally hidden from sight from the middle or opposite side of the glen. This being so, it was abandoned as a feature of the garden, and was screened for a considerable length from the other part of the glen. Outside of the gully the rest of the glen was fairly level, with a slight pitch or inclination in the direction of the brook outlet. The inclination saved the situation. It became possible to construct an artificial waterway, fed from the natural one, and discharging into it again, or, in other words, it was made possible to direct the course of the true brook, either temporarily or permanently, as desired, into a new channel through the main body of the glen.

At a point near where the brook enters the glen a dam was built across it, fitted with a gate, so as to permit a free or limited flow of water, as the case might require. Above this dam a gate diverted the water into the artificial channel, as already suggested. This diversion being made, for fifty feet or so, a subterranean one, the volume of water which passed through it was limited, and the surplus flow of the brook went over the dam, and thus discharged through its natural channel. It was deemed best to limit the body, and consequently the velocity, of the artificial flow, so that the danger of damage from washouts might be obviated.



Plan of "Glenbrook." The positions from which the photographs accompanying this article were taken are indicated by the lettered arrows. The location of trees are indicated in black, while shrubbery and low growths are shown in full

The artificial waterway first took the form of a shallow, winding brook, rising from the ground and disappearing into it again only to reappear. It flows aimlessly between rocks, and trickles over them in minute falls. Its banks are bordered by rocks, grass and plants. Tall grasses infest it, and shrubs and trees shade it. Passing under a small stone bridge, it empties at last into a small and fairly shallow pond, which is the central feature of the waterway. The outlet of this pond is by way of a tier of small cascades, which lead successively to a deep basin. The outlet of this basin passes under a foot-bridge and discharges into the original waterway as it leaves the glen. Stone steps lead down from either side of the cascade motive to a stone landing just clear of the flow of the water. The central motive, perhaps, of the whole scheme is the log-cabin built on the shore of the pond, and backed up against the slope of the glen toward the house. It is built of cedar logs, and has a covered piazza on two sides. The interior plan consists of one room, provided with a fireplace and cozy Oriental fittings. When last seen by the author its roof was gradually acquiring a covering of Filipino thatch over the shingle, much to the benefit of its general lines and harmony with the garden.

From the doorway one descends, by a series of short stone flights, to the edge of the pond and the boat-landing, where

a rowboat and a birch canoe are moored.

The drive, which connects with the house by the way of the stable, enters the glen with the brook, and skirts it to the point of its terminal turn near the cascades. It is continued in a foot path which crosses the bridge, and, turning, follows the foot of the glen and reaches a flight of rustic wooden steps.

View from "D" on plan of "Glenbrook," showing the boat-landing and its relation to the cabin

Just prior to the beginning of the steps cut into the bank, in a semi-circular basin, is a spring. This having been stoned up at the back discharges its water into the basin over the face of a flat inclined and projecting stone. The outlet to the basin is under the walk into the pond.

About half way up the steps a narrow pathway branches off and follows the shore of the pond at a steadily decreasing grade until it reaches the cabin. This pathway is well shut in by trees and shrubbery.

Other than these walks or side paths already mentioned, the path motive is effected by the use of flat stones placed in the clipped grass-plots, after the manner of Japanese stepping-stones. This stepping-stone effect is still further carried out in the shorter runs of steps from the glen to the upper level. The use of stones for the purpose above mentioned is to be commended. The inevitable weeding and trimming up of the path are avoided; it is simply necessary to keep the grass cut. This is from the labor-saving view of the matter; artistically their effectiveness is not to be questioned. Such stones used on the level stretch should be set flush with the soil, or, at least, not enough above it to hinder the easy use of the mower. If they be set lower than the soil they readily become small ponds on the slightest provocation.

View from "E" on the plan of "Glenbrook," showing lantern, stepping-stones, and rough stone steps in the background

The single stone Japanese lantern is extremely simple, and seems to set just in the right place, where it may be utilized to light the cabin entrance and the steps to the house level. This lantern is the only real Japanese touch employed, other than the stepping-stones. The interior furnishings of the cabin are largely Japanese, but these are naturally outside of the out-of-door consideration.

This brief description, together with the plan and pictures, will give a general idea of the layout of "Glenbrook." It is not ambitious; in fact, it is simple, and thus more easily realized. The owner, however, has not completed it all at once; on the contrary, it has been a slow growth; a bit here and a bit there, as the humor suggested. It was not what may be called an expensive job; just what it may have cost is impossible to say, as it was constructed largely by the employees of the owner at odd and spare times. It is unique as an example of the informal sunken garden, and, shut off from the rest of the world as it is, one forgets in the midst of its delicious quiet that the other ever existed.

What more, indeed, does one need, and in what better way could one have set about creating his own garden? There is an endless pleasure in the work, which ceases to be a task if one puts one's heart into it and sets about it in the right way. The garden of "Glenbrook," it seems to me, exhibits all the beauties of garden-making in a singularly beautiful way. Not that it is the most beautiful of all gardens, but it has brought to its owner and creator the full satisfaction of a fine work finely done.

View from "C" on plan of "Glenbrook," showing the stone bridge and cabin

View from "A" on the plan of "Glenbrook," showing the cascades at the front of the pond

View from "F" on the plan of "Glenbrook," showing the arrangement of stones in the waterway

View from "B" on the plan of "Glenbrook," showing the simplicity of line, and the lantern is the central object about which these details are disposed

The windows are spaced in ample breadth of wall

"The Lindens,"

The Summer Home of E. S. Williams, Esq., at Nahant, Massachusetts

By Charles Chauncey

THE summer home of E. S. Williams, Esq., at Nahant, Mass., is a splendid house, with fine lines and proportions. The design shows a central building, with wings of equal size extending in either direction. The surface of the wall space is well broken by many windows built in ample breadths of wall. The individuality of the design of the house is most excellent, and it has a tendency toward the Italian feeling.

The entrance to the house is from a simple classic porch, which is reached from the highway by a central avenue, which sweeps around a circle in front of the house. The entrance-porch is only one step from the grade. Another step takes one to the lobby, on one side of which there is a coal-closet, while on the other is built a toilet-room. Two more steps land one on the level of the main floor. The living-hall, built in the center of the house, has a staircase with white-painted balusters and a mahogany rail. Green and white is the color scheme of the hall.

A glimpse of an interior

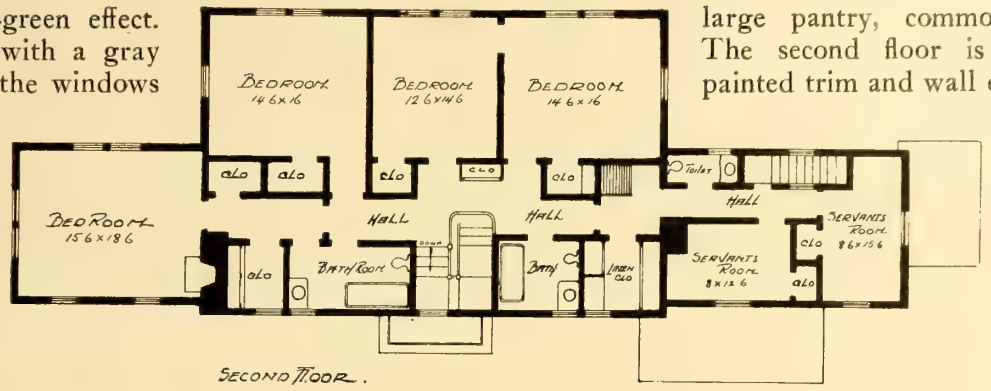
A broad doorway, opposite the entrance, opens into the living-porch, which is built at the rear of the house, overlooking the sea. The living-room has a white-painted trim and a wall covering of two-tone green-striped paper. It has a large open brick fireplace, with the hearth and facings of similar brick, and a mantel of Colonial character painted white. A paneled seat is built in the bay-window. The color scheme is green throughout, which is most effective and appropriate for summer.

The floor is covered with a green rug in one color for the center, with a border of rose-pink design on a background of green. Soft green silk curtains are hung at the windows over softer ones of white muslin.

The sun-room is reached from the living-room. It is enclosed with windows, and all the remaining wall space is finished with North Carolina pine, stained and

treated with a forest-green effect. The floor is covered with a gray and white rug, while the windows are hung with turkey-red muslin. The living-porch is also reached from the sun-room.

The dining-room occupies the same relative position as the living-room on the opposite side of the hall. It is trimmed with cypress, and has a paneled wainscoting to the height of five feet, at which point it is finished with a plate rack. The wall space above is tinted a soft green. The ceiling is beamed and ribbed. The entire woodwork is stained and finished in a soft brown. A two-tone blue rug covers the floor, while dotted Swiss curtains are hung at the windows and fastened back at the lower middle. The open fireplace is built with green brick facings and hearth, and the mantel is of simple design.



A door leads from the dining-room to the butler's closet, which is fitted up with sink, drawers and cupboards complete. Another door opens into the kitchen, which is provided with all the appointments, including a large pantry, common in such a house. The second floor is treated with white-painted trim and wall covering of paper with large floral designs. There are four windows and two bathrooms on this floor, the latter wainscoted and paved with tiles and finished with porcelain fixtures and nickel-plated plumbing.

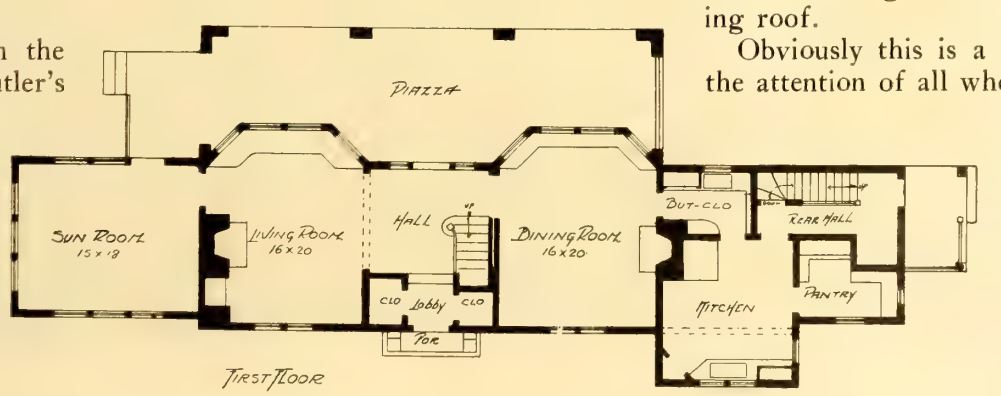
The two servants' rooms and toilet are placed over the kitchen extension.

The house is heated by a hot-water system placed in the cellar. The cellar also contains laundry, fuel rooms, etc.

The porches on the inner side of the house overlook the sea

There is no attic, except a storage space, which is reached from the second floor by a ladder through a well-hole. This section is well ventilated by "blinkers" placed in the roof in as unobtrusive a manner as possible, and it harmonizes well with the graceful lines of the long, sloping roof.

Obviously this is a house that commands the attention of all who see it, on account of its splendid architectural features and because it seems an expression of the taste and requirements of the owner. Almost all new houses attract a certain amount of at-



An angle of the inner porch

The simple porch of the entrance door

The woodwork of the dining-room is stained soft brown with a green tint above

tention, but it is not given to many to receive, as does this one, the distinct consideration of approval.

The deliberate and masterful way in which the architects have handled the massive wall surfaces by avoiding the usual superfluous decorations has been the means of bringing about this successful result.

It is not a new thing to build a house on a vacant piece of land, and the site chosen for the house, already described, is not an exception to this condition. The plot was hedged at the roadside by magnificent elm trees of many years' growth, but beyond this line, and to the water's edge, there was nothing in the form of foliage upon the site. The success of the house depended, of course, upon the development of the estate. Green pines in tubs were placed at either side of the entrance door, while pink geraniums, with overhanging vines, were put in boxes in front of the principal windows of the first story, thus adding a touch of color to the soft gray tone of the exterior wall surfaces. Considerable

The trellised pergola in the garden

The formal garden and its enclosure

planting has been done about the kitchen extension and correspondingly with the sun-room end of the house.

From the living-porch and from the sun-room are vistas of the formal garden which is built at the east side of the house. The garden is laid out in a geometrical form, with numerous flower-beds radiating from a central mound surmounted by a sun-dial. The division line of the garden and the adjoining property is separated by a high pergola, formed of latticed work. This pergola is painted green of a dark shade, nearly the color of the grape-vine leaves, which are now being grown over it. The walks are well built with ashes and crushed stone, and are finished with a top dressing of white gravel.

The ornamental additions to the garden are the entrance gate at the front and side of the garden, and the great tubs of flowering hydrangeas placed along the terrace. Massive bay trees, standing in tubs at the entrance of the walks, are also effective.

The Profitable House

By Joy Wheeler Dow

A House for a Guaranteed Cost

THE man who has five thousand dollars capital can not be called exactly an object for charity. Yet five thousand dollars invested at five per cent. is not a competency. And if one's earning capacity has departed, one must live up to every dollar of this principal before the American idea of charity applies to his case.

The great middle class of Americans—the eminently decent class—to whom crime and scandal rarely attach, and who are sustaining the Nation's honor and its strength, are difficult to reach, it is said, when in need. That is, however, untrue. While you are reading these lines, hundreds are sending forth C. Q. D. signals from their main topmasts, and ever being answered in this wise: "Well, really, my dear fellow," or "dear girl," as the case may be, "we do not see how we can help you very much. You see, our organization has mostly to do with the very wretched poor and—dirty." Because dirt breeds disease, and that menaces the life of everybody.

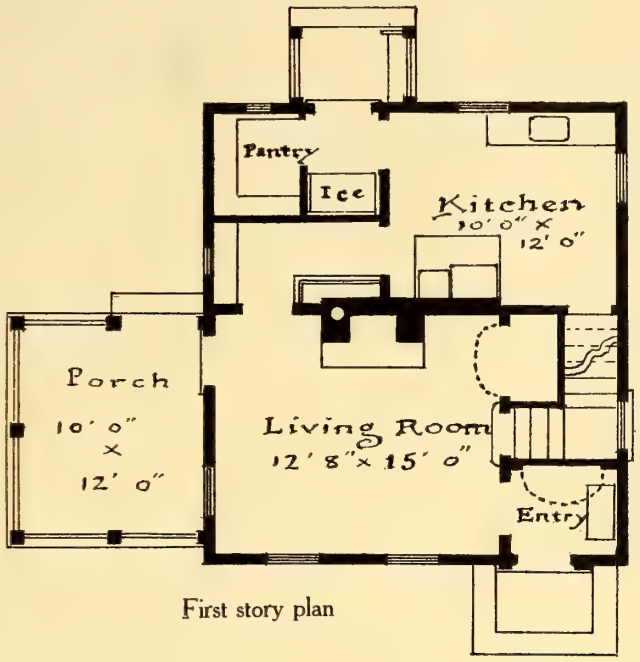
But a home of one's own, which can not be spent and lost as easily as money in the bank, is something, if not a competency, for one may eke out an existence on surprisingly little in the country. "We lived in summer as the birds live," writes Louisa Alcott of her early days. And to advocate this, or, better still, to advocate acquiring a home of our own before the earning capacity has entirely forsaken us, and we have lost our "grip," is the burden of this article.

Were the means of the designer of this twenty-five-hundred-dollar cottage equal to his enthusiasm, he would not only guarantee to find the estimates and let the contracts at the figure named anywhere within a sixty-mile radius of the city of New York, where conditions are normal, as he does, but he would further be willing to investigate cases, and supply every deserving, middle-class American who applies with a home of this caliber and artistic excellence, which means historical excellence, as his chosen charitable avocation, just as Mr. Carnegie builds libraries, and he would not wait either until the recipient had become wholly a public charge without a dollar.

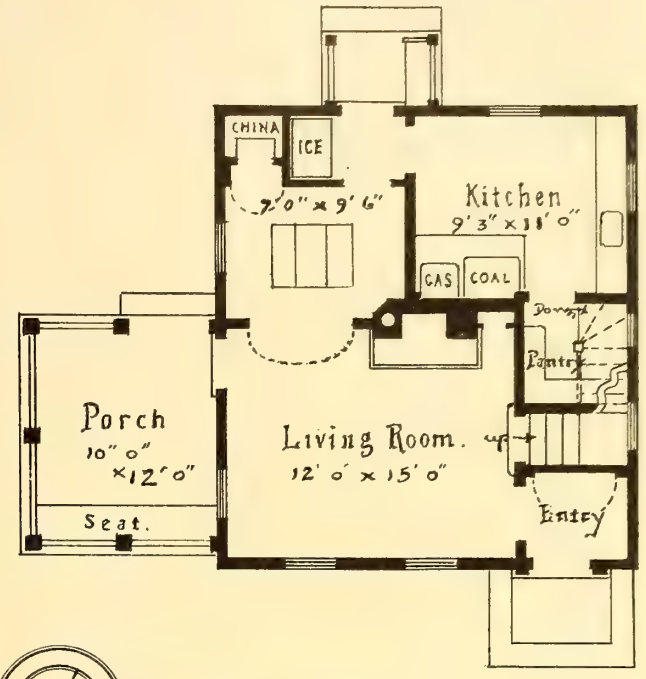
The general prospect of the house

Education which teaches us to be unhappy without some of the refinements and luxuries of life, comes in our time almost as free as air, while bread and butter, a home, even a bed to die in, at last, are still dear necessities.

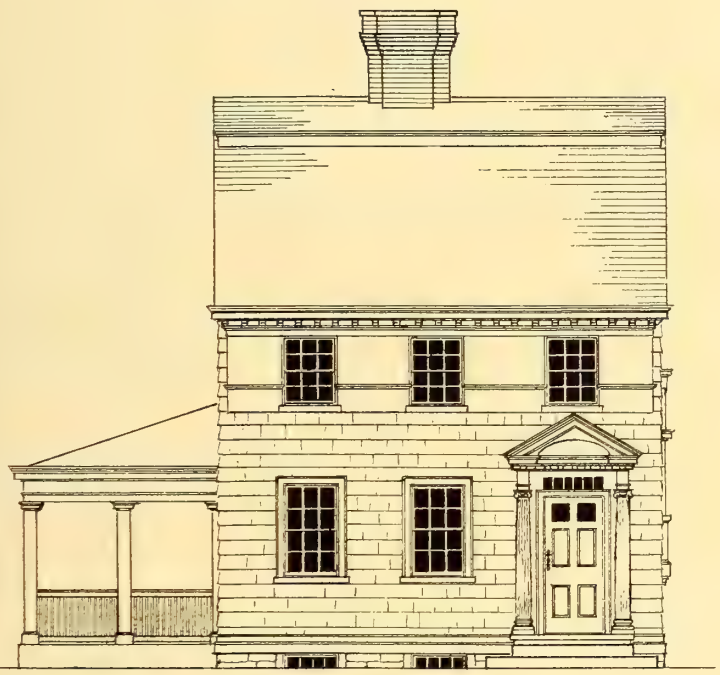
But we will not look long upon too gloomy truisms. For here is an attractive proposition for the young struggling couple not thinking



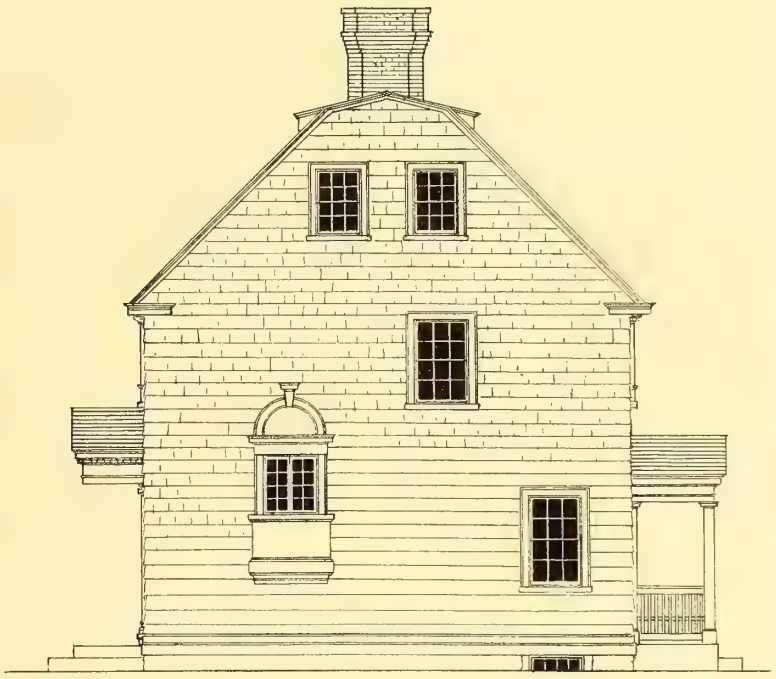
First story plan



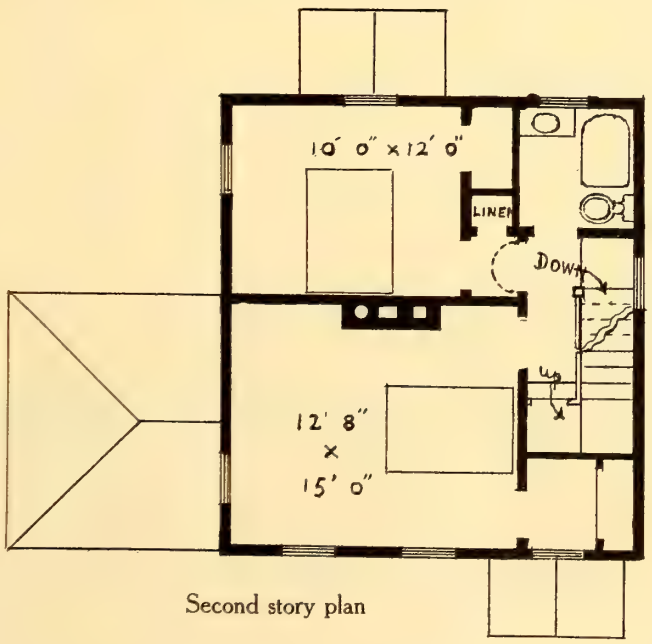
First story plan



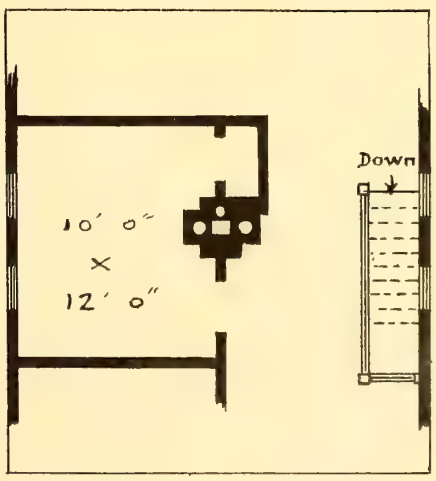
Front elevation



Elevation of one end



Second story plan

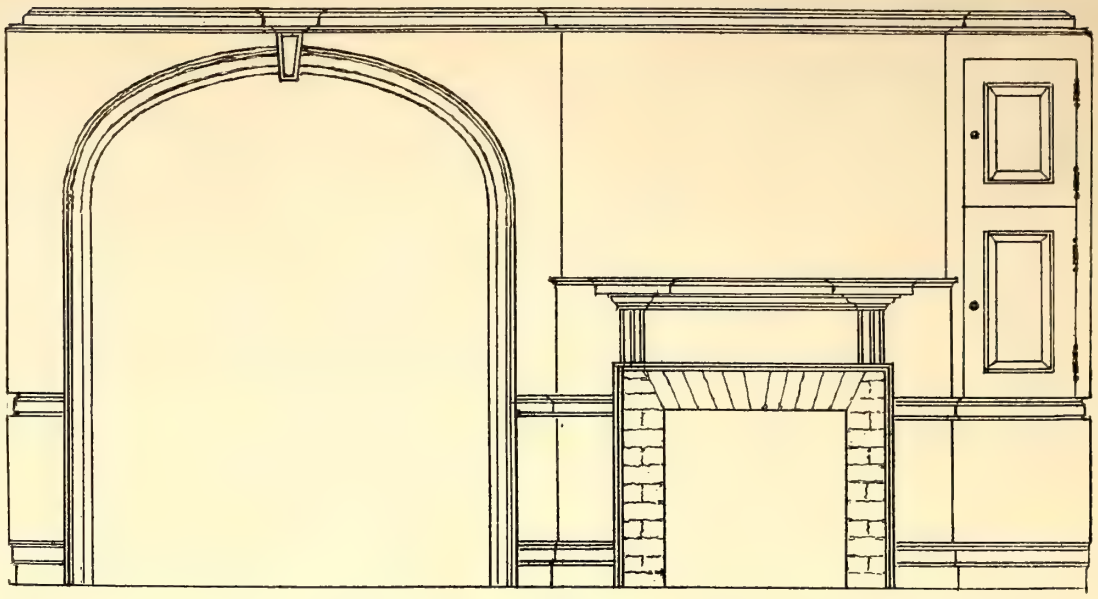


Third story plan

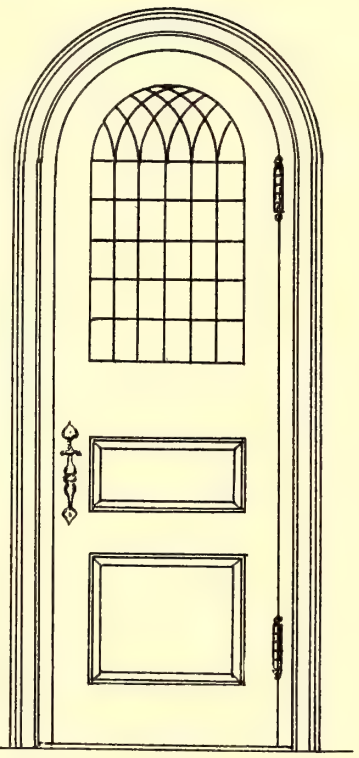
of divorce, because each one lives to work for the other, as well as for old maids and bachelors left alone in the world. And to sell it, if needs be, why, it would "go like hot cakes" (expressive if not grammatical) at any time, because it is so tiny, yet complete — so easily cared for without a servant. With taxes at the minimum, insurance a mere bagatelle, fuel and lights hardly worth mentioning by comparison, who could not live in this twenty-five hundred dollar cottage profitably?

There is no waste room, no unused room, no unnecessary hall or passages. Indeed, is it not the limit of economical house-planning? Softwood and paint will answer for the interior trim, and a light gray texture to the plaster obviates calcimine and wall-paper.

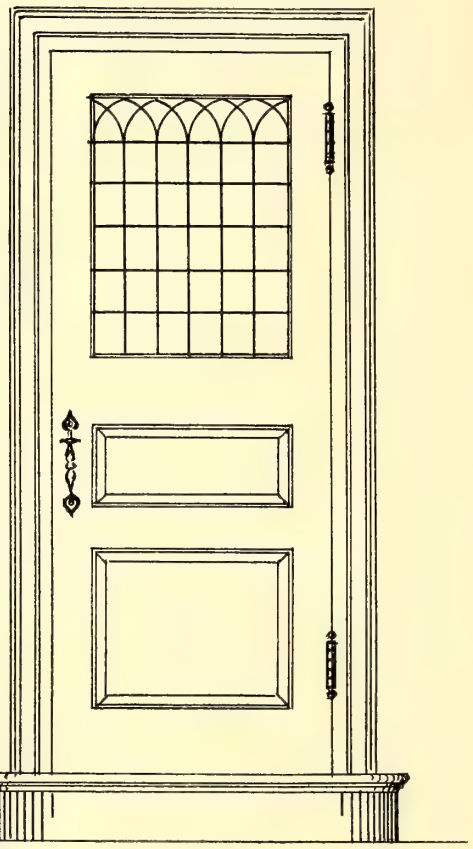
The exterior shows shingles painted brown, but the architect reserves the right to substitute stucco if necessary, also to build the cellar wall of either concrete, concrete blocks, brick or stone; also to use such framing material and other wood as may be most advantageous.



Elevation of south-west wall of living-room



China closet door



Staircase door

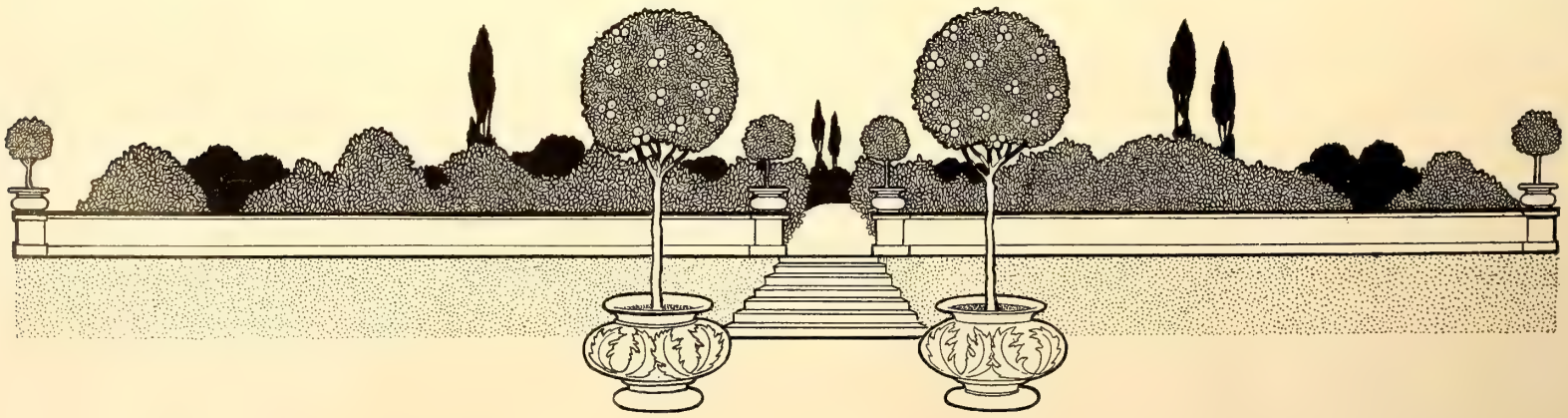
There is a laundry platform and two trays to set up in a corner of the cellar, coal bins and warm-air furnaces. The cottage is not to be piped for gas, except as to a gas-range connection, nor wired for electricity, as oil lamps are much more suitable to it, and much kindlier disposed to the eyesight. The architect's commission has not been computed. But everything else to make the cottage liveable and comfortable is included.

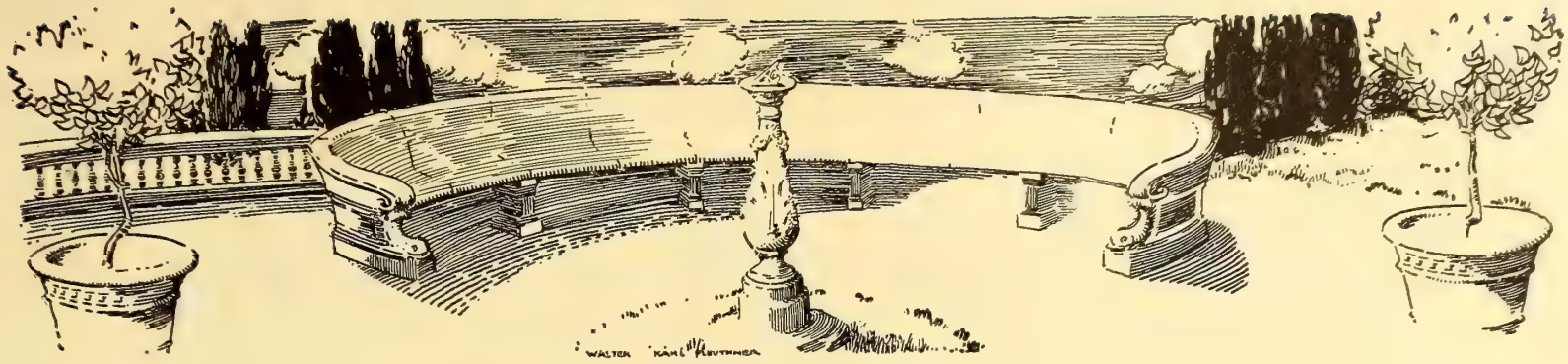
The scope of this paper does not permit more than the brief description that has been given. But this is sufficient and ample. It is a modest house and needs but a modest description.

GUARANTEE

Mr. Joy Wheeler Dow has guaranteed to build this house, as described, within sixty miles of the city of New York, under normal conditions, for twenty-five hundred dollars. This guarantee to hold good until September 1, 1909.

Publishers AMERICAN HOMES AND GARDENS.





Garden Notes

Pot-grown Vines for Summer Planting

IT IS well to remember that many vines, such as wistaria, climbing roses, honeysuckles, akebia, trumpet vine, ampelopsis, ivy and euonymus, can be bought in pots ready to plant at almost any time during the summer, so that if one's house or pergola, or whatever is not finished in time to use dormant plants in the spring, one need not wait a year, but by the use of potted vines can get an immediate result, even though it be meager at first.

If the vines grow little in the remaining months of the summer, the gain is, nevertheless, great because they will be well established and ready to grow vigorously the following season, and should surpass any vines that are planted later, though both seem of the same size to begin with.

Pot-grown vines cost from twenty-five cents to a dollar each.

Tub Plants

The orthodox thing to put in a large pot or tub is a bay tree, but there are many others which will look well in the formal situations where tubs are commonly used. Box trees pruned to the pyramidal or standard form are almost as common as bay trees, but they are not so beautiful.

Red cedars, if they have been carefully transplanted, can be used in large pots, and any of the arbor-vitates, yews and retinosporas are good, though not so interesting, I think, as the broad-leaved evergreens, like the rhododendron, andromeda, kalmia, etc. plants whose blooming season is short, but whose foliage always looks well.

The magnolias, either stellata or soulangeana, make rather picturesquely formal trees for large pots, and these can be put on the terraces much earlier than the bay trees.

Japanese maples are attractive, chiefly because of their color and delicate graceful foliage.

All little trees which can be trained to a fairly uniform shape, but which still show their characteristic branching, are more charming than plants like the box and privet which present a mass of uniform texture and show none of the skeleton within.

An unusually beautiful thing from this point of view is the wild orange (Citrus trifoliata) which has vigorous tangled branches and thorns of freshest green.

Bamboos do well in tubs and are easy to manage. A bamboo casting its shadow on a stucco house reminds one of Japanese prints!

Any plant of distinguished appearance and neat habit can be used in tubs, and will, perhaps, gain an added charm because of its unusual situation, especially if it be an unappreciated native.

It would be a great relief to see other things than bay trees, box bushes and hydrangeas decorating our piazzas in summer.

Many of these things, too, can be bought already potted for mid-summer planting. One nurseryman offers Japanese maples, magnolias and hydrangeas in pots.

Rhododendrons

Rhododendrons are probably the most useful and the most abused of all our plants, besides being the most profitable for the nurseryman to sell. In consequence of this latter fact, we see them everywhere and in the most impossible situations.

The rhododendron grows naturally in woods in a deep soil retentive of moisture and with a thick mulch of leaves.

Their requirements in other ways are not exacting, but they should have a deep soil full of decayed vegetable matter, a thick mulch and no lime, which seems to choke the hair-like roots.

They should be planted in masses giving each other protection, and not as single specimens in the lawn. It is the latter practise which leads so often to failure, especially when young plants just come from Holland are expected to stand our dry summers in a sunbaked lawn.

If you can not plant them in large masses close together, at least give them the protection of some other shrub, or even of a boulder or a wall, and if you would have them grow and prosper give them plenty of water and a heavy mulch of forest leaves.

The Care of Newly Planted Trees and Shrubs

Trees and shrubs which were planted this spring should be thoroughly watered in dry times, and the earth about them should be kept cultivated and free from weeds for the first summer. Their roots have had little time to grow and have not gone down to the supplies of water below and they are very likely to suffer, if they do not die, in mid-summer. In watering, remember that irrigation is what is needed, not spraying, which means putting on a minimum of water in the showiest way.

Trees should be looked at frequently through the summer, especially after high winds, to be sure that they have not been loosened or even blown over.

Spraying

Some sort of a pump for spraying plants should always be kept ready for use in the garden. The knapsack sprayer is good, or a pump to be attached to an ordinary wooden pail may be used.

Bordeaux mixture; arsenate of lead, or arsenate of copper; and kerosene emulsion or whale-oil soap should be on hand with the proper utensils for mixing.

It is important to have these things ready and convenient to use, because spraying must be done at the beginning of a disease or an attack of insects, or the injury will be irreparable.

Hollyhocks should be sprayed every two weeks with Bordeaux to prevent rust, and all leaves show signs of the disease should be cut and burned.

Melons should be sprayed with Bordeaux every ten or fourteen days, beginning early in July, to prevent leaf mold.

Tomatoes, spray with Bordeaux every two or three weeks for leaf spot. With lead arsenate in Bordeaux if there are also worms and flea beetles.

Squash, spray with Bordeaux, at the same time with the melons.

Vines which show wilted leaves are diseased and should be destroyed at once.

Roses, spray with whale-oil soap or kerosene emulsion for aphis.

For leaf hopper, as above, or spray with plain water.

Vines on the Piazza

Vines on the piazza should be trained to a single wire running plumb from the eaves to the ground. This will keep them away from the railing, and a single wire makes them much easier to trim in the spring than they would be if grown on chicken wire.

CORRESPONDENCE

The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

By Alice M. Kellogg

Author of "Home Furnishing: Practical and Artistic"

INTRODUCING BLUE IN A COLOR SCHEME

"I AM especially desirous," writes M. J. T., of New Jersey, "of introducing in my living-room a suggestion of blue, as I am very fond of this color. I do not want a blue room, you understand, but to combine this color with others in an attractive way. Please tell me how to do this, as I often read in this magazine about color schemes of blue and brown, but I do not know how to go to work. So far there is nothing in the room but some solid oak chairs with leather cushions in brown—mission, I think, the style is called."

If the room has a sunny exposure a combination of blue and green would suit the dark tones of the furniture. A rug in these two colors would be the beginning, using a gray or buff paper on the walls, the former, if the room is sunny and well lighted, the latter, if there are few windows and a north or east exposure. As the fireplace is probably finished there is no opportunity for introducing any blue in this part of the room, but the mantel may hold one or two vases of some of the artistic glassware that is made in New York, each one a separate piece of blowing. If there is a divan or lounge in this room there may be some pillow-covers of blue silk, not a clear plain color, but showing a mixture of gold threads in the weaving. Again, in the table-cover or lamp mat this shade may appear; or, in the cushions for some wicker chairs, the seats and backs may have a shaded velvet of blue. Still another way of enjoying one's favorite color indoors is to have a vase of flowers or a flowering plant, lobelia, forget-me-not, violets, foxglove, pansies or corn flowers, according to the season.

LACE FOR A HALL DOOR

The difficulty of treating a hall door that has a long glass panel is often brought to the attention of this department. Such doors are the delight of the suburban builder and the perplexity of the home-maker. In reply to H. G. the new filet lace that comes in imitation of the antique hand-made work is suggested. This usually comes in white or cream, but it may be dyed a deeper tone or an ecru if it is to be placed near dark-finished woodwork. The pictures that appear in squares on the lace, sometimes seven and sometimes nine or twelve inches, contribute a touch of interest to the long panel, and if the width of lace is right for the space, it may be shirred loosely, but not in folds, on small brass rods at the top and bottom. A pretty tearoom in New York employs this method of shielding the glass doors and windows, with the filet lace dyed a pale yellow like the walls of the room.

LAMP-SHADES FOR THE COUNTRY HOME

"Is there anything new this year for lamp-shades that are suitable for a house in the country. My own taste is for a silk shade, but this is expensive for the summer weather, as it needs renewing after a season's wear. The Japanese paper shades are too gaudy for the colors in my rooms. Some years ago they were daintier and less aggressive in colors."—S. J. G., Springfield, Mass.

The new wicker shades would be just what this correspondent would like, if the lining suits the coloring of the room. These linings are orange, bright red or green, and the colors when the lamp is lighted are not too brilliant. They suit the tall banquet lamps of black iron, or a pottery jar that is fitted with an oil fount. The diameter of the shades at the bottom range from twelve to eighteen inches. The candle shades, too, are very charming in this style.

BEDROOM FURNITURE

A bride who is fitting up her first home has three bedrooms to furnish. She writes: "Now that I am selecting my furniture I see that there is very little choice of woods. In my own town I can only buy mahogany and maple. Would you have two rooms in mahogany and the other in the maple? Or, the other way? As I am buying the furniture from money given me for wedding presents, I am not hampered by the price, but I do want something that will be in good taste for a long time."—D. F. R.

The maple furniture may be left out of the list, as there is no restriction in price, and the maple is a cheaper and less interesting wood than some others that are now on the market. The Circassian walnut comes in a gray-brown that suits the dainty colors of a sleeping-room, and this is especially good in the plain styles, Sheraton or Louis XVI. Mahogany can also be had in the light finish, with or without inlaid lines in dark wood—reversing the ordinary way. Satinwood with inlaid and painted decorations in the Adam style is another suitable bedroom furniture that gives character and interest. White enamel and gray enamel in the very fine finishes make beautiful guest rooms when combined with high-class wall coverings and rugs. Oak is finished in a number of ways—gray, green, brown and natural—and birch is given a silver-gray stain.

From this list a choice may be made to suit the different rooms and their exposures, and as all of the large cities can show the different kinds it would be worth while to make a trip for the specific purpose of seeing and buying. Or, if one is satisfied to buy from catalogues, the choice could be made through the mail.

CHINA FOR AFTERNOON TEA

"A Teacher" writes: "I take great pleasure when spending a little time with my friends in the afternoon in the tea or coffee that they make for me in their own rooms. I have a few cups and saucers that I brought from my home some years ago, but they are of no espe-

(*Continued on page xvi*)

Garden Work About the Home

By Charles Downing Lay

WHAT TO DO WHILE THE HOUSE IS BUILDING

"WE ARE in the greatest quandary you can imagine. Our house, which was to be ready on the first of October will not be finished until the end of November, or later. We shall move in at once, but dread to live all winter in a house surrounded by such disorder, and it will be too late after the end of November to do much work outside. Is there anything we can do to fix up the grounds now? The grading has not been touched, the terraces are not built and the roads are not even staked out. It is too distressing for words! How can we make the place presentable for the winter?"

Your case is, indeed, a hard one, but you need not be discouraged. It may be possible to do much before the house is finished. At least, it will be a help to lay out the drives and have them built, to arrange the paths and to grade the terraces.

If the outside of the house is nearly finished, except the painting, all the work of grading can be done now as well as any time. The space which is needed for piles of lumber, tools, and for unpacking cases, can be provided on one side of the house, perhaps on the site of the drying-yard if the service court is not large enough.

It will be impossible, of course, to do much planting now, but it will be a great comfort to have the grading done, and to have the place neat and orderly, even if it be bare.

The edges of paths and roads can be sodded, and the garden can be gotten ready to plant in September and October.

Toward the end of August the lawn should be seeded, and in a month or six weeks everything will be green and flourishing.

Evergreens can be moved in August with some succcess. It is certainly worth trying, because they will embellish the place at once.

If you get at the work at once you should be ready for a long planting season in autumn, and the following spring should see the work finished.

There is no time to be lost, as grading and getting ready to seed a lawn is a long job if it be well done.

Everything that is done now makes the work next spring more easy and the result more sure.

HOUSE FLIES

A. M. B. wants to know if anything can be done to abate the fly nuisance?

The house fly is a serious pest in many country districts, and one that should be fought by every means in our power. The flies lay their eggs and the larvæ are hatched in horse manure, so it is in the stable that the battle must be waged.

(*Continued on page xviii*)

THE artistic supremacy of THE KNABE PIANO is born of its capacity for interpreting the musical ideals of great composers and players with rare subtlety.

This artistic supremacy may be traced through three generations to the creative genius of the founder of The House of Knabe, whose lofty conception of worthy musical expression continues an impetus to the maintenance of that standard of perfection which makes THE KNABE THE WORLD'S BEST PIANO.

Style J. *"upright"* Grand $500. -- Mignon *"horizontal"* Grand $750. -- Knabe-Angelus $1050.

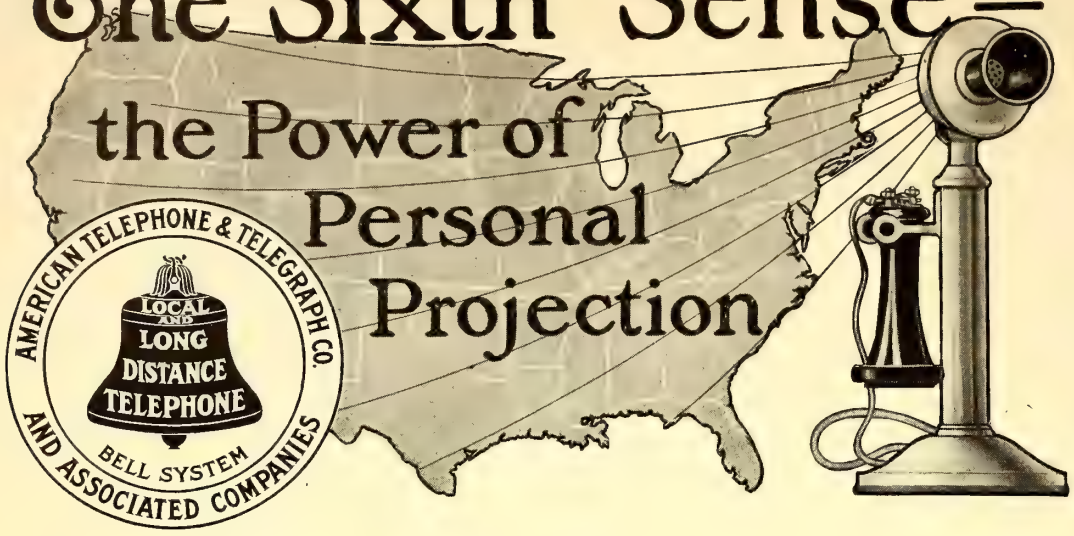
Knabe Pianos may be bought of any Knabe representative at New York prices with added cost of freight and delivery.

WM. KNABE & CO.

439 5th Ave. Cor. 39th St.

BALTIMORE NEW YORK WASHINGTON

The Sixth Sense—the Power of Personal Projection



An American's sense of projecting himself far beyond the skies and hills of his forefathers is largely responsible for his self-assurance—for his mental vigor and the progress which this has meant.

This Sixth Sense—the sense of projection—is due to the telephone. It is due to the *Bell telephone system* which at any instant conveys *his personality,* if not his person, to any part of the country. It carries his voice with *directness* to the ear of the person wanted. Carries it with its *tone qualities* and *inflections*—things which are *vital* to the expression of personality.

Bell telephone service is more than a mere carrier of messages. It is a system of sensitive wire nerves, carrying the perception-message to the nerve centre and the return message simultaneously. *It is the only means of communication which thus carries the message and the answer instantly.* While *you* are projecting *your* personality—the strength of your individuality, to the distant point, the party at the other end is projecting *his* personality, at the same instant and by the same means, to you.

You are virtually in two places at once.

Though this service is in a class by itself, the Bell telephone has no fight with the other public utilities. Its usefulness is dove-tailed into *all other utilities.* Each of the others is unquestionably made more effective by the Bell telephone.

A telegram is delivered from receiving office to house by *telephone.* The more people telegraph, the more they *telephone.* The more people travel, the more they *telephone.* The more energetically a man pursues business of *any* kind, the more he needs and uses the *telephone.*

The universal Bell telephone gives every other utility an added usefulness. It provides the Nation with its Sixth Sense.

A business man has one important arm of his business paralyzed if he does not have a Long Distance Telephone at his elbow. It extends his personality to its fullest limitations—applies the multiplication table to his business possibilities. It keeps things moving.

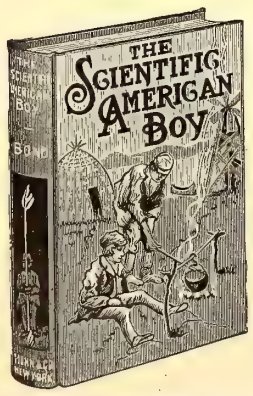
The American Telephone and Telegraph Company
And Associated Companies

Every Bell Telephone Is a Long Distance Station

The Scientific American Boy

By A. RUSSELL BOND

12mo. 320 Pages. 340 Illustrations. Price, $2.00. Postpaid.



¶ This is a story of outdoor boy life, suggesting a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. In each instance complete practical instructions are given for building the various articles. ¶ The needs of the boy camper are supplied by the directions for making tramping outfits, sleeping bags and tents; also such other shelters as tree houses, straw huts, log cabins and caves. ¶ The winter diversions include instructions for making six kinds of skate sails and eight kinds of snowshoes and skis, besides ice boats, scooters, sledges, toboggans and a peculiar Swedish contrivance called a "rennwolf." ¶ Among the more instructive subjects covered are surveying, wigwagging, heliographing and bridge-building, in which six different kinds of bridges, including a simple cantilever bridge, are described.

FOR SALE AT ALL BOOKSTORES

Our well-equipped Book Department is prepared to recommend & supply
MUNN & CO.

BOOKS

Relating to Architecture, Ceramics, Decoration, Rugs, Furniture, etc. :: ::
NEW YORK

Problems in Home Furnishing

(*Continued from page xiv*)

cial merit, either in color or decoration. Now, I want to collect, one at a time, some pretty china for serving tea. Shall I have it all of one color? Or, shall every piece be different? What kind of a teapot shall I use? I would also like to know the best way to serve tea, and what to have with it, if it does not take too much of your time and space."

For the cups and saucers a unique idea is to have old-fashioned flowers for the decorations, and these can be had in the English, German, French and Swedish chinaware. The size should be not too small, nor too large, as coffee and chocolate may be offered at times in place of the tea. For a practical teapot, the English one of smooth brown glaze with a porcelain strainer is the best; but if this looks too heavy an English ware with flower decoration may be used, as this is better than a metal pot for the brewing of the tea. The sugar-holder and cream-pitcher may match the teapot, and an etched glass may be used for slices of lemon. A bowl to hold a silver strainer may be of another ware. A biscuit jar may be of Japanese ware, and also a tea-holder. Plain bread and butter, plain and sweet biscuits may be offered with the tea, and chocolates, peppermints, salted nuts added. The tray to hold the tea things may be of brass, copper, silverplated on copper or mahogany. The tea-table is not kept set as it was a few years ago, but is arranged just before a guest is expected, or afterward in an informal way.

WALL-PAPERS FOR AN APARTMENT

A "City Dweller" is interested in making the different rooms in her flat open harmoniously from each other. Writing from Philadelphia she says: "I never realized how much one lived in the next room in which one happened to be until I took up my abode in this tiny apartment in which, with evident attempt to look spacious, the builder has made numerous large openings. I have put up door-curtains (as there are no doors), but when these are even a very little drawn one insensibly takes in the walls of the connecting rooms. The former tenant chose bright red, a strong green and a pale blue for the three principal rooms, and I am going to have these repapered at my own expense, as it will do so much to make my home attractive. The woodwork is an undesirable cherry in the parlor, and yellow pine in the dining-room and den. All of these rooms are inclined to be dull, as the sun does not reach them very much. What is the best choice at the smallest cost?"

To accomplish the best results with the limitations mentioned in this letter, it would be wisest to use the cheap ingrain paper, as one may get a soft, old red (terra-cotta in a light tone) for the parlor with cherry woodwork, and a deep buff for the other two rooms. Next best would be the same colors in a texture effect at a higher price.

For Five Dollars

American Homes and Gardens and Scientific American

SENT TO ONE ADDRESS FOR ONE YEAR

Regularly Six Dollars

Vantine's

Send for the latest Vantine book (free) "Oriental Fitments for Country Homes."

Oriental Furnishings

FOR SUMMER HOMES OF THE PERIOD

whether employed as an interior or out-of-door decorative and furnishings aid, the products of the East supply just the right touch at just the right spot. They're invariably harmonious in designs and color schemes, and *always* moderately priced—*when procured at Vantine's*, direct importers from every Oriental land.

FOR GARDEN, LAWN VERANDA AND SOLARIUM

Japanese Bronzes, Stone Lanterns, Jardinières and Garden Seats in Porcelain and Pottery. Specimens of remarkable beauty and distinction gathered from all parts of the Far-away East.

THE VANTINE TEAS COFFEES, CONDIMENTS

and Oriental delicacies have long served cottagers and summer folks. Special 12-lb. Caddies of Vantine Teas and 10-lb. Tins of Vantine Coffees, put up for shore or mountain use. Send for booklet.

LAMPS AND LANTERNS

of Vantine design—the rarest and fairest Oriental wares forming the basis of their beauty.

FLOOR COVERINGS

Oriental Rugs of every weave and size. Japanese Rugs, Mattings, Chinese and Japanese. Moodj Rugs and Oshkosh Mats.

SCREENS FROM JAPAN

Hand-painted and embroidered—all color schemes—every favored size.

PORCELAINS FOR THE TABLE

Innumerable designs; all the Japanese wares.

VASES AND JARDINIÈRES

All the favored porcelains and potteries.

ORIENTAL FURNITURE

Cantonese Rattan, Japwood, Willow and Woven Grass, and Teakwood—peculiarly suited to country-house requirements.

DRAPERIES, CUSHIONS AND PORTIERES

from all the Orient. Unapproachable for their varied beauty, and adaptability to every scheme of decoration—inexpensive, *always*.

JAPANESE PICTURES

Water-color studies in Oriental frames. A broad and fascinating collection.

Artist Decorators at Your Service

A. A. VANTINE & CO.
The Oriental Store
Broadway, between Eighteenth and Nineteenth Sts.
NEW YORK

BOUND VOLUMES OF

American Homes and Gardens

1,100 ILLUSTRATIONS **1908** 494 PAGES PRICE, $5.00

American Homes and Gardens covers a wide scope; it deals with house building from the design and construction of modest cottages on tiny lots to the building of mansions on large estates. All degrees of gardening, from laying out a landscape to the planting of a window-box, are dealt with. Practical questions of water supply, of sanitation, or of the arrangement of the kitchen receive equal treatment with draping of windows or the arrangement of old china.

American Homes and Gardens is beautifully printed. The year's volume contains more than a thousand engravings, as full of detail and finish as actual photographs. They depict some of the old and historic mansions of America, and the most beautiful of gardens or of natural scenery. The following list of a few of the principal practical articles which appear in *American Homes and Gardens* during 1908, will show the wide choice of subject:

Notable American Homes (12 descriptive articles)—**The Rose as a Summer Bedder**—**Private Automobile Garages**—**Leaded Glass Windows**—**Etching on Copper and Brass**—**Problems in House Furnishing** (12 papers)—**Garden Work About the Home** (12 papers)—**Indoor Bulb Culture**—**Farming Experiment of a Woman**—**Rugs from the Scrap Bag**—**Water Parks**—**Old-Time Lights**—**Latches and Knockers**—**The Sun Room**—**Japanese Gardens in America**—**Sun-Dials**—**Heating and Lighting with Alcohol**—**Spring Houses Old and New**—**Planning a Country Home**—**The House Roof and Its Garden**—**The Plant and the Season**—**Garden Streams and Bridges**—**Stencil Work in Home Decoration**—**Bungalows** (12 articles)—**Scientific Poultry Breeding.**

¶ A limited number of volumes for 1907 are available. 480 pages. 1,050 illustrations. Price, $5.00. Volume for 1906, $5.00. Volume for 1905, $3.50.

MUNN & CO., Publishers, 361 Broadway, N.Y.

Cottage Designs

THESE books offer to architects, builders, homeseekers and investors by far the most complete collection of plans ever brought out, while the price is so low as to place them within the reach of all who have an interest in the building of homes. The designs are compiled with a view to representing all grades of cost, from the simplest types of cottages, as illustrated in the first series, to the comparatively elaborate structures reaching to $10,000 or more, in cost, treated in the fourth series, so that examples are given covering nearly every requirement, with respect to cost, in inexpensive homes.

No. 1. Cottage Designs with Constructive Details

A series of twenty-five designs of cottages, most of which have been erected, ranging in cost from $600 to $1,500; together with the details of interior and exterior finish, all drawn to convenient scale, and accompanied by brief specifications. Illustrated with 53 full-page plates of floor plans, elevations and details.

No. 2. Low Cost Houses with Constructive Details

Embracing upward of twenty-five selected designs of cottages originally costing from $750 to $2,500, accompanied with elevations, floor plans and details of construction, all drawn to scale, together with brief descriptions and, in many instances, full specifications and detailed estimates of cost. Illustrated by 61 full-page plates of floor plans, elevations and details.

No. 3. Modern Dwellings with Constructive Details

A selection of twenty designs of artistic suburban dwellings erected in various parts of the country, at costs ranging from $2,000 to $5,000; embracing floor plans, elevations and constructive details, showing interior and exterior finish, and drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions, from photographs of the completed structures, and 61 full-page plates of floor plans, elevations and details.

No. 4. Suburban Homes with Constructive Details

Comprising twenty selected designs of attractive suburban homes, ranging in cost from about $3,000 upward; embracing floor plans, elevations and constructive details, showing interior and exterior finish, all drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions from photographs of the completed structures, and 75 full-page plates of plans, elevations and details.

ONE DOLLAR EACH, POSTPAID
(Sold Separately)

MUNN & CO. *Publishers of* SCIENTIFIC AMERICAN
Three-Sixty-One Broadway, New York

400 Pounds Won't Burst It

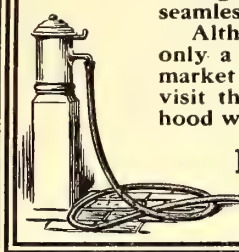
Electric Garden Hose will stand a higher water pressure than any other rubber hose on the market.

It is about *eight times as strong* as ordinary wrapped hose. Twist it. Tie it into a knot. Pull it around sharp corners. You simply can't kink Electric Hose or hurt it in any way.

Electric Garden Hose

outwears ordinary hose two to one. **It is an utter impossibility for the plies to unwrap. Briefly, it is built thus: A series of jackets, woven in one piece, of high test cotton fabric, alternating with layers of high grade rubber. The whole vulcanized into a solid seamless piece. You can buy any length up to 500 feet.**

Although Electric is the finest hose ever made, it costs only a cent or two more than common. If you are in the market for hose, no matter how little, it will pay you to visit the hardware dealer, or seedsman in your neighborhood who sells Electric Hose.



Electric Hose & Rubber Co., Wilmington, Del.

Spend Your Summer at Muskoka

Canoe in innumerable channels and waterways among green islands—fish, bathe—live on and in the water—and on shore play golf and tennis.

Muskoka Lakes, Canada

Less than a day's journey from the principal American cities, via Niagara Falls, Detroit, Chicago. Solid trains from Buffalo and Toronto. Modern hotels set in fragrant pines afford splendid service. Hay fever is unknown. Handsomely illustrated descriptive matter free on application to

G. W. VAUX, 917 Merchants Loan & Trust Bldg., Chicago
F. P. DWYER, 290 Broadway, New York
E. H. BOYNTON, 360 Washington St., Boston
W. ROBINSON, 506 Park Bldg., Pittsburg

W. E. DAVIS, Passenger Traffic Manager, MONTREAL
G. T. BELL, General Passenger and Ticket Agent, MONTREAL

Styles of Ornament

Exhibited in Designs and Arranged in Historical Order

A Handbook

for Architects, Designers, Artists, etc. Also for Schools, Libraries and Private Study

By ALEX. SPELTZ

EXHIBITING the entire system of Ornament in all its different styles. 400 Plates of Illustrations, containing about 5000 Figures. With illustrated descriptive text. *Descriptive Circular sent on request.*

One Volume, 8vo, 656 pages. Bound in Cloth, **$6.70**

MUNN & CO., 361 Broadway, NEW YORK CITY

Garden Work About the Home

(*Continued from page xiv*)

Experiments have shown that flies carry the germs of typhoid, among other diseases, on their feet, and it is quite possible that cases may originate by eating food which has not been protected from flies.

Besides actual disease, the flies also carry the various bacterias of fermentation and putrefaction.

The horse stables should, if possible, be screened (this will be a comfort to the horses also), and dishes of poisoned water put about to kill the stray flies, but the most important thing is to have the stables cleaned three times a day, and to have the manure spread on the land at once, or put in an underground pit which the flies can not reach.

A weekly dose of carbon bisulphid put in the pit will kill any larvæ or eggs which may be there. This practice should materially reduce the number of flies in your own stable, but it will be hard to induce your neighbors to do likewise, especially if they are farmers.

CHILDREN'S GARDENS

It is easy to get children interested in gardening, but, as F. G. says, it is hard to keep them so, unless they can be made to forsee the ultimate results of care and attention.

They should have a small plot which is to be all their own, to plant and cultivate and care for, and they should be given things which germinate and mature quickly.

Radishes and lettuce are good, and a hill or two of potatoes, a few string beans and a tomato plant might be tried.

Of the annual flowers, poppies, portulacca, Drummond's phlox, pinks and nasturtiums are probably the best, because they grow so quickly and bloom so profusely.

The child's garden should be laid out with some care, as a sort of miniature of the real gardens of the place, and the few flowers it may produce should be used in the house, and the vegetables on the table, lest the children lose interest in unappreciated labor.

As discipline the child's garden might be made almost as effective as the old onion patch.

THE SUMACS

The native sumacs are among the most interesting and characteristic of our plants. They grow everywhere in open fields, and their unique beauties embellish every scene. They look best, perhaps, when among tall red cedars, which set them off in a very fetching way.

The stag-horn sumac (Rhus hirta) sometimes reaches a height of forty feet, but it is ordinarily less than half as high.

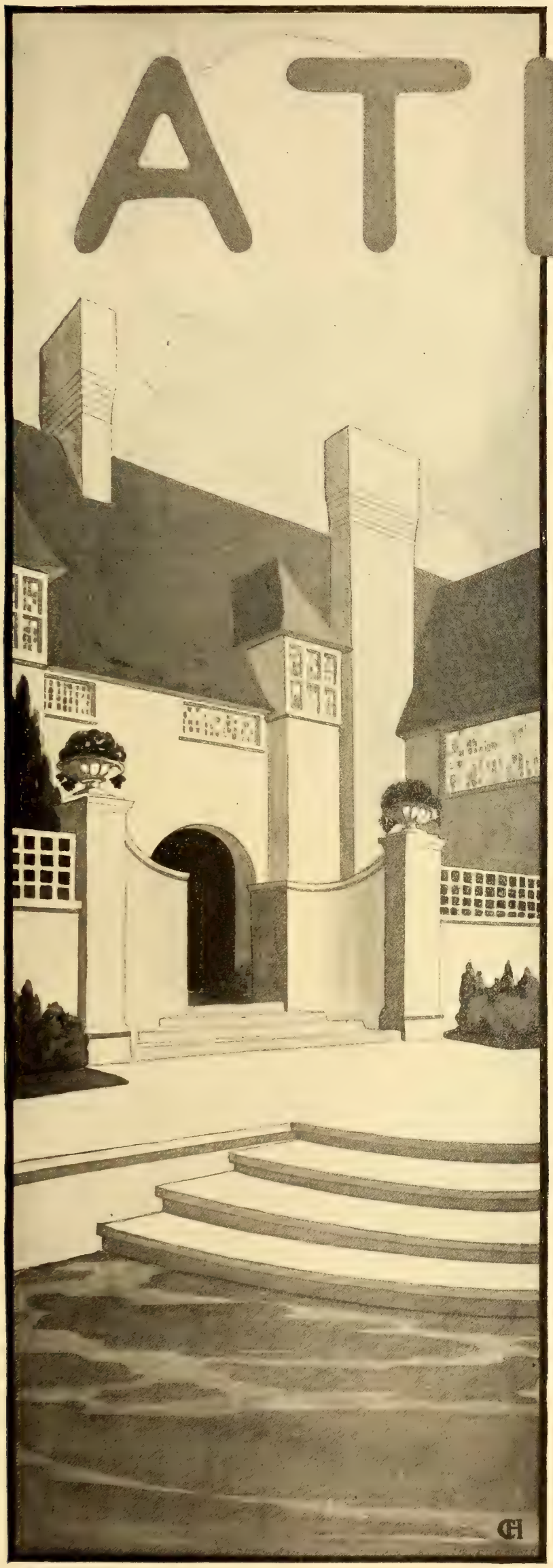
It is a picturesque tree or shrub with the large pinnate leaves borne well out on the branches, which are covered with small hairs like the velvet of a stag's horns. The large bunches of crimson berries, which last throughout the winter, are very striking.

The dwarf sumac (R. copallina) is quite different, having leaves of a deeper green, and so shiny that they seem varnished.

The smooth sumac (R. glabra) is much like the stag-horn, but has smooth glaucous branches and leaves of a peculiar silvery green.

The large flower head is a yellowish white, deliciously scented and very attractive to the bees.

The chief glory of all the sumacs is their brilliant autumn foliage. With the first days of October they begin to turn, and they flame



ATLAS CEMENT CONCRETE

Concrete is not a compromise. You do not sacrifice any ideal of beauty in order to have the safety of concrete. Concrete construction offers not only unburnability, cleanliness, durability and economy; it also offers a material capable of any artistic conception. It is the most wonderful building material that has ever been offered to mankind. To use it is a step forward, but no matter how beautiful the plan, you must come right down to durability of construction. You must be sure of your concrete.

To be sure of your concrete you must be sure of your cement. You must specify a brand which will give you the best concrete. You must use

ATLAS PORTLAND CEMENT

"Atlas" is the standard in cements. It is pure and absolutely uniform. It is made in but one grade—the same for everybody. The Government is using "Atlas" in building the Panama Canal, having bought, 4,500,000 barrels for the purpose.

You should be informed on cement and concrete. Send for and read these books:

"**Concrete Cottages**" (sent free).
"**Concrete Country Residences**" (sent for 25 cents).
"**Reinforced Concrete in Factory Construction**" (sent for 10 cents).
"**Concrete Construction about the Home and on the Farm**" (sent free).

TRADE MARK

THE ATLAS PORTLAND CEMENT CO. PORTLAND ATLAS CEMENT 30 BROAD ST. NEW YORK

NONE JUST AS GOOD

If your dealer cannot supply you with Atlas, write to

THE ATLAS PORTLAND CEMENT COMPANY
DEPT. 10, 30 BROAD ST., NEW YORK

Largest Output of any Cement Company in the World—Over 40,000 Barrels per Day

The Uniform Soda Cracker

There's never the slightest variation in the high quality of **Uneeda Biscuit.**

Wonderful care and precision on the part of expert bakers, combined with facilities to be found in no other bakery, ensure this uniformity of **Uneeda Biscuit.**

Damp days, cold days, wet days or hot days their goodness is kept intact by the moisture-proof package.

5¢

NATIONAL BISCUIT COMPANY

JUST PUBLISHED

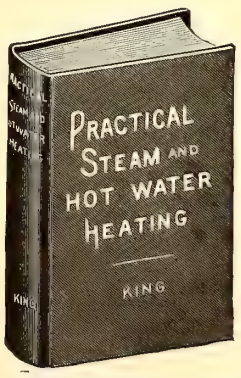
Practical Steam and Hot Water Heating and Ventilation

JUST PUBLISHED

By ALFRED G. KING

402 Pages. Containing 304 Illustrations

Price $3.00



An original and exhaustive treatise, prepared for the use of all engaged in the business of Steam, Hot Water Heating and Ventilation

THE standard and latest book published. Tells how to get heating contracts, how to install heating and ventilating apparatus. Describes all of the principal systems of steam, hot water, vacuum, vapor and vacuum-vapor heating, together with the new accellerated systems of hot water circulation, including chapters on up-to-date methods of ventilation; fan or blower system of heating and ventilation; rules and data for estimating radiation and cost, and such other tables and information as make it an indispensable work for heating contractors, journeymen steam fitters, steam fitters' apprentices, architects and builders.

This work represents the best practice of the present day and is exhaustive in text, diagrams and illustrations.

CONTAINING CHAPTERS ON I. Introduction. II. Heat. III. Evolution of Artificial Heating Apparatus. IV. Boiler Surface and Settings. V. The Chimney Flue. VI. Pipe and Fittings. VII. Valves, Various Kinds. VIII. Forms of Radiating Surfaces. IX. Locating of Radiating Surfaces. X. Estimating Radiation. XI. Steam-Heating Apparatus. XII. Exhaust-Steam Heating. XIII. Hot-Water Heating. XIV. Pressure Systems of Hot-Water Work. XV. Hot-Water Appliances. XVI. Greenhouse Heating. XVII. Vacuum Vapor and Vacuum Exhaust Heating. XVIII. Miscellaneous Heating. XIX. Radiator and Pipe Connections. XX. Ventilation. XXI. Mechanical Ventilation and Hot-Blast Heating. XXII. Steam Appliances XXIII. District Heating. XXIV. Pipe and Boiler Covering. XXV. Temperature Regulation and Heat Control. XXVI. Business Methods. XXVII. Miscellaneous. XXVIII. Rules, Tables and Useful Information.

Valuable Data and Tables Used for Estimating, Installing and Testing of Steam and Hot-Water and Ventilating Apparatus are Given

MUNN & COMPANY, PUBLISHERS, 361 BROADWAY, NEW YORK CITY

American Homes and Gardens *and* Scientific American will be sent to one address for **$5.00**

Regular Price, $6.00

and burn until winter puts their fires out, except the embers of their fruit.

The poison-sumac (R. vernix) is the earliest to turn in the fall, and the most brilliant of all, but, like its brother poison-ivy (R. radicans) its great beauty should not save it from extermination. They are both a menace to people with sensitive skins, and have no place except in the wilds.

The fragrant sumac (R. aromatica) is a sprawling shrub which does well under trees. Its leaves are downy and aromatic when crushed.

The sumacs do well on dry rocky hillsides, and when a house is built in such a situation nothing could be more suitable to cover its hough stone foundations. They are easy to grow and can be transplanted from the fields with good success.

INSECT ENEMIES OF THE GARDENER

EVERY thing has its price, and the price of a successful flower garden is eternal vigilance. From the first appearance of any green leaf or blade above ground there is a simultaneous appearance of something to destroy it; indeed, most of the worms and caterpillars time their appearance by the burgeoning of the trees and plants. Secure the chrysalid of any of the large moths—that of the tomato worm—*Protoparce carolina,* for instance, and keep it in a warm room, it will defer its appearance from the chrysalid until the time that the tomato leaves are green, quite as well as though left in the open ground, so, too, the large prometheus moths which lay their eggs on the woodbine and do not emerge from their case until the leaves appear on the vine.

The first worm to cause actual trouble in the garden is the cutworm, and these do much damage to young plants, often making it necessary to make several plantings before a permanent output is secured. Usually it will be sufficient—if the planting is not so large as to make the labor too great—to enclose each plant with a small tin can which has had the bottom melted away. Many gardeners make a practice of gathering up during the winter all the old tin cans available. In the spring a fire is kindled out of doors and the cans thrown upon it until they are melted and the bottoms drop off. They are then ready to be used and are pressed into the soil around the plant, pressing them down an inch or two. But in using this form of protection it is important to see that no worms are enclosed within the barrier. Other gardeners have success bating the worms with meal wet with sweetened water in which a small quantity of Paris green is placed, or chopped grass or clover is used instead, but care must be used where any form of poison is employed, as it is quite as apt to exterminate any chickens which gain access to it as the worms it is intended for. Fortunately, not much harm is done by this pest after the last of May, but another serious pest of similar habits makes its appearance soon after the disappearance of the cutworm; this is the small brown or pink worm or grub, known variously as the cosmos borer, the dahlia or aster worm, etc. This little pest enters the stalk of these plants close to, or just under, the surface of the ground and proceeds to eat his way upward, and its presence is suspected only when attention is attracted to the plants by their blackened and withered appearance. It is not altogether a hopeless pest, however, as both preventative and remedial measures may be taken. The prevention consists in soaking the ground about the plants for a depth of three or four inches with a week solution of Paris green, applied every week, from the time the plants are a foot high until fully

grown. The remedy is to find the place where the worm entered the stalk of the plant and to run a small wire up the stalk until the worm is met and destroyed. If the plant is not injured too greatly this and the drawing of the earth up about the stalk until the first joint above the wound is covered, and packing it closely there, and keeping it constantly moist until roots have started from the covered joint—as will be quickly done in the case of dahlias, cosmos and similar plants—when the plant will, usually, grow on as though nothing had happened.

The trouble is more serious when it attacks the columbines or aquilegias, as the plant is virtually killed before the trouble is suspected. If the plants appear diseased and the tops are taken hold of and pulled lightly, they will part from the roots, showing a cavity below the crown which will be found to be occupied by a small pink worm about a half inch in length. Here the preventative soaking of the soil with the Paris-green soultion alone is reliable—that and stirring and examining the soil occasionally for traces of the pest.

But it is in the rose garden that the most serious trouble brews, as the enemies of the rose are so many in numbers and so gregarious in habit and come altogether, as it were. The green aphis is one of the most persistent and troublesome, making its appearance soon after the new growth starts in the spring and quickly covering the young shoots with a moss-like accumulation of tiny green insects. The remedies are several, and consist of the various preparations of tobacco in solutions used as a spray, in powder used as a dust, and as a fumigator used in the form of damp stems laid on live coals and held under the plants until the insects are overcome by the fumes. This, while the most effective form of application, is inconvenient in the open air owing to the difficulty of confining the smoke.

A simple way of doing this, however, is to take a large corn popper—one with a good long handle—and place a few good coals therein and fill with damp tobacco stems and hold under the affected plants. If a sheet or other covering can be placed over them to confine the smoke the results will be far more certain. Usually where there is a water system supplying considerable pressure these pests can be subdued by frequent spraying.

The small, green caterpillar which lies along the under side of the leaves is more difficult to deal with, but may be destroyed by the use of kerosene emulsion sprayed upon the under side of the leaves. Care, however, must be exercised in the use of kerosene, as it is very apt to burn the foliage if used too strong. An emulsion made from one coffee cupful of kerosene, a third of a bar of soap, and a gallon of hot water, thoroughly agitated and reduced to four gallons or more, will be strong enough, and it will be well to test this on a single branch before spraying the entire plant or plants.

Kerosene emulsion may be successfully used on all soft-bodied insects, such as caterpillars, aphides, slugs and the like. Paris green for all eating insects, as caterpillars, beetles—as potato bugs, squash bugs and rose-chafers or bugs, but is useless for insects which suck the juices from the plants, as the various aphides, black, green or gray.

There is another small worm very destructive on the roses and spireas. This little fellow draws the tips of the leaves at the end of a twig—usually about a bud, about him, and, thus protected, proceeds to fill up on the tender tissues of the plant. As he is easily detected, the remedy here is to take him, encased in his green sheath, gently between the thumb and finger and—crush him.

Heat that makes complete

There are thousands of houses that need only to be furnished with the *home-making* comfort of Steam, Hot-Water, or Vacuum heating to secure good tenants or ready purchasers. No one will long live in a poorly heated house, and the vacant house goes to pieces much faster than one which is occupied.

AMERICAN RADIATORS & IDEAL BOILERS will attract and hold tenants at 10% to 15% higher rentals; property sells quicker, and owner gets back the full cost of the heating outfit. IDEAL Boilers and AMERICAN Radiators are annually replacing thousands of old-fashioned heating equipments that have been found wasteful and wanting in OLD cottages, houses, stores, churches, schools, etc. Ever hear of any one going back to other forms of heating once they have tried our way? Any argument in that to you?

Don't delay investigating this well-paying permanent investment with its marked fuel, labor, and repair savings, besides the greater comfort, health protection, cleanliness, safety, and durability.

A No. 3015 IDEAL Boiler and 175 ft. of 38-in. AMERICAN Radiators, costing the owner **$118**, were used to Steam heat this cottage.

A No. 3-22 IDEAL Boiler and 400 ft. of 38-in. AMERICAN Radiators, costing the owner **$205**, were used to Hot-Water heat this cottage.

At these prices the goods can be bought of any reputable, competent fitter. This did not include cost of labor, pipe, valves, freight, etc., which installation is extra and varies according to climatic and other conditions.

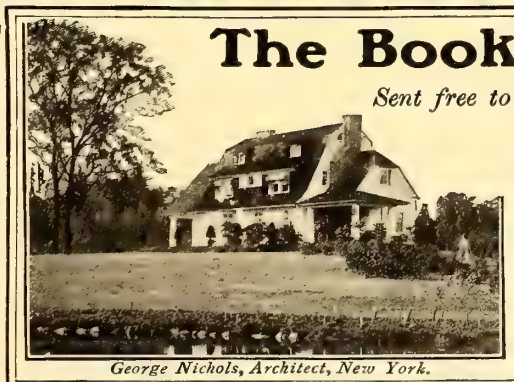
Just the season to get the services of the most skillful fitters. *Prices are now most favorable.*

Write to-day for free valuable book, telling how to save heating dollars and the way to save buildings from emptiness and decay. Our definite information and booklets put you under no obligation whatsoever to buy.

Showrooms all large cities **AMERICAN RADIATOR COMPANY** Write Dept. 6 CHICAGO

The Book of 100 Houses

Sent free to anyone who intends to build.



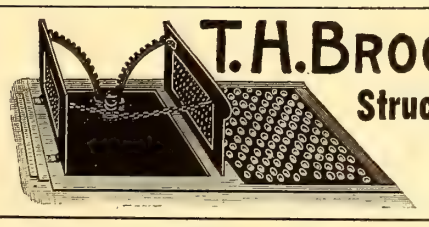
George Nichols, Architect, New York.

This book contains photographic views of over 100 houses of all kinds (from the smallest camps and bungalows to the largest residences) in all parts of the country, that have been stained with

Cabot's Shingle Stains.

They are designed by leading architects and are full of ideas and suggestions of interest and value to those who contemplate building.

SAMUEL CABOT, Inc. Sole Manufacturers,
131 Milk Street, Boston, Mass.
Agents at all Central Points.



T. H. BROOKS & CO. CLEVELAND, O.
Structural & Ornamental Steel Work
FLOOR & SIDEWALK LIGHTS.
SEND FOR CATALOGUE.

Dixon's Silica Graphite Paint Lasts

And the reason why it lasts is because its pigments are inert. What have inert pigments to do with it? Our Booklet 106B will tell you.

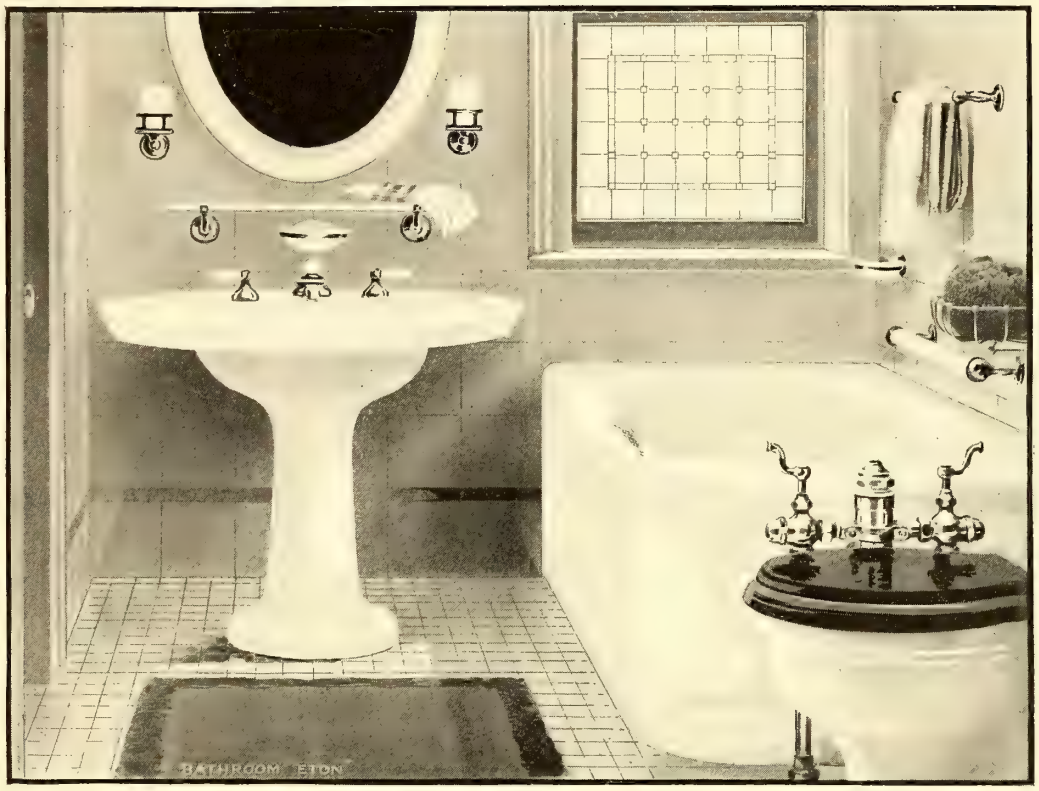
JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.

MOTT'S PLUMBING

THE beauty, purity and substantial character of this bathroom are due to the fact that the fixtures are of Mott's Solid Porcelain. The "La Salle" bath is glazed outside—a notable advantage and an achievement in the potter's art.

"MODERN PLUMBING" is a valuable booklet to those planning bathroom equipment. The most advanced types of fixtures in Imperial and Vitreous Solid Porcelain and Porcelain Enameled Iron are shown in 24 model interiors that range in cost from $85 to $3,000. Description and price of each fixture is given, also information regarding decoration and tiling.

The booklet will be sent on receipt of 4 cents to cover postage.

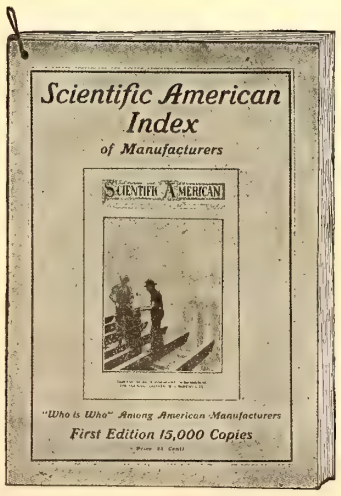


THE J. L. MOTT IRON WORKS
1828 OVER EIGHTY YEARS OF SUPREMACY 1909
FIFTH AVENUE AND 17th STREET
NEW YORK CITY

BRANCHES
Boston, Chicago, Philadelphia, Pittsburgh, Detroit, Minneapolis, Washington, St. Louis, New Orleans, San Francisco, San Antonio, Atlanta, Seattle and Indianapolis. CANADA: 83 Bleury St., Montreal

SCIENTIFIC AMERICAN INDEX OF MANUFACTURERS

NEWLY EDITED EDITION OF 1908



64 PAGES 2500 ENTRIES FREE

SOME TEN YEARS AGO the publishers of the SCIENTIFIC AMERICAN issued an index of leading manufacturers. This book has proved so popular that the demand has warranted an entire new edition. The invaluable list tells where to buy almost any article, and buyers who fail to find the information they desire can have their wants specially looked up without charge, and if necessary we will advertise their wants in our inquiry column without expense. The first edition of this index is only 15,000 copies, so that early application is necessary.

MUNN & CO., Publishers Scientific American, 361 Broadway, New York

At the first appearance of the rose bug Paris green must be resorted to, and the plant well sprayed at nightfall. So rapidly does this vandal work that the bloom of the entire rose garden may be hopelessly ruined in twenty-four hours if not at once attended to. Much may also be done by picking the bugs off the bushes early in the morning, when the dew is still heavy and the bugs sluggish, and dropping them into pails of hot water or water containing a little kerosene.

For the rose hopper—a small yellowish-white insect found on the under side of the leaves—syringing with whale oil soap is effective, but must be thoroughly done.

The Japanese iris and the asters and chrysanthemums are much troubled by a large, disgusting-looking black beetle which eats the flowers. Paris green may be used here also, but hand-picking early in the morning is more satisfactory, as it does not disfigure the flowers and the results are more certain. This beetle is very sluggish and easily caught.

These are the principal insects which affect the flower garden, but occasionally the potato beetle invades the beds and appears on the nicotianas and disfigures the plants. He may be destroyed by spraying the plants with a weak solution of Paris green, or they may be hand-picked which is, perhaps the better way. It is very important to go over the plants leaf by leaf examining the under side of the foliage for the mass of yellow eggs and destroying these, as, in this way, the ravages of the pests are quickly nipped.

Various caterpillars infest the vines about the house; all of these being soft-bodied may be killed with the kerosene emulsion, but as they are all eating creatures the Paris green will prove effectual used either as a spray or powdered on with lime when the vines are wet with dew. This, however, is unsightly, and should always be washed off as soon as it has done its work. In fact all emulsions and sprays should be removed with clear water sprayed rather forceably on the plants as soon after as is feasible.

Various scale insects affect plants in the house, especially hard-wooded plants like the palms, rubber trees, orange and lemon trees, fuchsias, ivies and the like. On palms the scale usually appears early in spring, and should be watched for and not allowed to obtain a start as, once firmly established, it is difficult to eradicate. I have found nothing better than to remove the insect with a sliver of wood or any handy tool that will scrape it off without injuring the plant. Washing the plants with whale oil soap or fir tree soap is fairly successful, but it is better to supplement this with a thorough examination and the removal of all scale found. The young scale are exceedingly minute, and when of any size are smooth, flat and shiny, the old insects presenting a rather rounded appearance and rough coat. They are more troublesome on ivies than on shrubby plants, and these plants are better treated by the soap wash, placing a large quantity in a large pan—a dishpan for instance—and laying the plant in it for a quarter of an hour, then washing off with clear water and repeating the operation in a few days if the first was not entirely effectual—and one application of any insecticide seldom is.

It may be suggested, however, that in the treatment of roses for the various pests which affect the plant that it is necessary to begin operations early—as soon as the first leaves appear—and not wait for the appearance of the insects, bugs, worms or whatever form they may take. A good dusting with hellebore while yet the leaves are wet with dew, and the renewal of the powder either as a dust or in solution of water and hellebore will prevent the pests getting a hold. Roses, more than

Unburnable Homes

We Build Them and We Build Nothing Else

Reinforced Concrete throughout, or exterior walls of brick or stone, and interior decoration and finish as desired. But the

Reinforced Concrete Interior Structure

is the *sine qua non*

Real Reinforced Concrete (Portland cement, sand and stone, reinforced with steel rods) is economical, unburnable, rust and decay proof—but requires for successful use good materials, good structural design, good workmanship and experience. Send for pamphlet descriptive of work we have built, and let us consult with your architect.

BENJAMIN A. HOWES, C. E.
Engineer and Contractor
1193 BROADWAY NEW YORK CITY

"You choose the colors"
Thread & Thrum Rugs
"we'll make the rug."

YOUR own individual rug, different from all other rugs, and in a high-class wool fabric adapted to your own decorations. If the rugs in stock colors do not suit your requirements we will make one that will, either plain, self-tone or contrast. All sizes up to twelve feet wide, any length. Seamless, wool weft, reversible, heavy and durable. Sold by best shops or write for color line and price list to ARNOLD, CONSTABLE & CO., NEW YORK.

THREAD & THRUM WORKSHOP, AUBURN, N. Y.

Cattle Manure in Bags ***Shredded or Pulverized***

Best and safest manure for florists and greenhouse use, absolutely pure, no waste, no danger. Write for circular and prices.

The Pulverized Manure Co.
21 Union Stock Yards, Chicago.

Wilks Hot Water Heaters

Insure Even Temperature

at any desired degree the year around in green houses, poultry houses, barns, garages, cottages, etc. Wilks' improved coal magazine, is the only one that regulates itself and keeps the fire 10 hours—saving need of night firing. Most economical in use of fuel, and as easily cared for as a kitchen range.

We guarantee satisfactory results from every heater recommended by us and installed according to our directions.

Write for Book giving sizes, price list, description, etc., and tell us what you want a heater for. We will advise you what to get and furnish specifications for setting up

S. WILKS MANUFACTURING CO.
3534 Shields Avenue, Chicago.

Details of Building Construction

A collection of 33 plates of scale drawings with introductory text

By CLARENCE A. MARTIN
Assistant Professor, College of Architecture, Cornell University

This book is 10x12½ inches in size, and substantially bound in cloth. **Price $2**

MUNN & CO., 361 Broadway, NEW YORK

most any other plants, are injured so rapidly that it is usually too late to save the early bloom and foliage when the injury has begun. When the plants are first uncovered in the spring is not too early to begin an active warfare. Thorough and persistent cultivation will do much to protect the plants by destroying those which are still in the ground in the form of chrysalids and dormant life.

NEW BOOKS

THE EARTH'S BOUNTY. By Kate V. St. Maur. New York: The Macmillan Co. Pp. 130. Price, $1.75 net.

The remarkable tale unfolded in this book is briefly summarized by the author herself on the second page. "The finding of a dear, old-time homestead and twelve acres of land," she writes, "amid picturesque scenery, which we could lease for three years at the ridiculously low rent of $180 a year, somewhat reconciled us to the practical, even before we had experienced the glorious invigoration of the industrious outdoor life on a farm, where each day reveals some new interest. Impecuniosity compelled our commencing at the bottom of the ladder—a few hens, a few ducks, and so on gradually through the poultry family, to the dignity of a cow; after whose acquisition the home rapidly became self-supporting, even showing a surplus profit at the end of the third year."

The moral, of course, is obvious, for if Mrs. St. Maur did this without any pre-experience, why should not thousands of others? And if she can write a series of successful and delightfully readable books setting forth these triumphs, why not every one else who makes the same effort? So she plunges precipitately into her subject, with an engaging chapter on the profit in winter lambs! Winter violets come next, and then the reader, fascinated with his work, is regaled with a chapter on tillage and the rotation of crops as regenerators. An essay on building and operating a silo comes next, and barnyard wealth naturally follows. So the tale is continued through papers on the orchard, dairy and young cattle, rearing family and work horses, managing and caring for quail and wild duck, goats, the wood-lots, thoroughbred poultry, and dogs. There must have been plenty of work on this farm, and hard work. As in a previous book by the same lady, written in a somewhat similar manner, no information is given as to the home life or the domestic cares of the people engaged in all this seething industry.

DETACHED DWELLINGS: COUNTRY AND SUBURBAN. New York: Swetland Publishing Co.

This handsome portfolio of a hundred detached dwellings is well worth having. It depicts not only some of the latest work of our best architects, but it illustrates, in a very striking manner, the enormous artistic progress that is taking place in domestic work of all kinds. The subjects are well selected, the houses are all interesting, and some of them possess marked individuality and beauty. The scheme of illustration includes the floor plans, with many details and interior views. Most of the illustrations are from photographs of the houses illustrated, but some working draw-

A CRAFTSMAN HOUSE FROM CORNERSTONE TO CHIMNEY-POT CURIOUSLY SUGGESTS THE CHARACTER OF ITS UNIQUE INTERIOR

THIS TYPE OF COUNTRY HOME

is a combination of art, comfort and economy, including fireproof features in hollow brick, with tile, slate or asbestos roofs. We design and build them anywhere, all under one contract.

All materials and unique devices prepared in our own shops, including woodcraft, metal work and wall reliefs.

No objection to building according to your own plans and specifications. We invite your inspection of many attractive houses and bungalows built in the last few years, also numerous sketches at our studios.

This work is in a class by itself. No increase in cost over ordinary types.

BUILDERS AND CRAFTSMEN COMPANY
38 WEST 32ND STREET NEW YORK

INVESTIGATE OUR BUILDING METHOD

JUST PUBLISHED

Bungalows, Camps & Mountain Houses

Consisting of a large variety of designs by a number of architects, showing buildings that have been erected in all parts of the country.

Many of these are intended for summer use, while other examples are of structures erected in California and the Southern States for permanent residences. Also Camps, Hunters' Lodges, Log Cabins, etc. The book contains

Seventy Separate Designs

of which several are Log Cabins and Camps

78 Exterior Views, 12 Interior Views and 69 Floor Plans

In the text is given an article on "The Bungalow," with hints on selection of site, sanitation, layout and construction, together with a very complete description of each design, with cost where it could be obtained. The work is intended to meet the needs of a large class of people who are planning summer homes at low and moderate cost, for erection in the Woods, Mountains, and on Lake and Seashore. Size 8x9½ inches, bound in illustrated boards. Price, $2.00 postpaid.

MUNN & COMPANY, Publishers
361 Broadway, New York

Wall Papers and Wall Coverings

A PRACTICAL HANDBOOK

for Decorators, Paperhangers, Architects, Builders and House Owners, with many half-tone and other illustrations showing the latest designs

By ARTHUR SEYMOUR JENNINGS

EXTRACT FROM PREFACE

THE author has endeavored to include characteristic designs in vogue today, and to give reliable information as to the choice of wall papers as well as to describe the practical methods of applying them. In dealing with matters concerning decoration there is always the danger of leaning too much toward an ideal and of overlooking the practical requirements of commercial life. The author hopes that he has been successful in avoiding this fault, and that his book will be regarded as both practical and useful.

One Large 8vo Volume, Cloth. $2

MUNN & CO., 361 Broadway, NEW YORK

"Corona" Enameled Iron Bath. H-6504.

Wolff Investment Value

THERE are as many conditions and degrees of responsibility entering into the guaranteeing of plumbing fixtures as there are firms issuing guarantee labels. Architects have realized the importance of these features for a long time, but it is only of late years that the layman has been interested.

The Guarantee Tubs cost only a trifle more than the cheap inferior article on the market. The cost of installation, that is, labor and material, required incidental to installing a bathtub, is the same for a cheap tub as it would be for a *"Corona"* fully guaranteed tub.

With the knowledge that many tenants and investors often base their judgment of the construction of the building on the class of plumbing fixtures that have been used, wise architects advise the use of ***Wolff Plumbing Material*** exclusively, even in purely speculative operations.

L. WOLFF MANUFACTURING COMPANY
MANUFACTURERS OF
PLUMBING GOODS EXCLUSIVELY
THE ONLY COMPLETE LINE MADE BY ANY ONE FIRM

SHOWROOMS: 91 DEARBORN STREET } CHICAGO
GENERAL OFFICES: 93 WEST LAKE STREET

DENVER, COLO. BRANCH OFFICES: **TRENTON, N. J.**

Minneapolis, Minn.: 615 Northwestern Building
Kansas City, Mo.: 1209 Scarrett Building
San Francisco, Cal.: Monadnock Building
Cleveland, Ohio: Builders' Exchange
Washington, D. C.: 327-328 Bond Building
Buffalo, N. Y.: 77 Richmond Avenue
Omaha, Neb.: 1108-1112 Nicholas Street

Accurate information regarding THE WORLD'S INDUSTRIAL PROGRESS is a necessity of MODERN BUSINESS LIFE, as well as a subject of ABSORBING INTEREST for every thinking man and woman.

For nearly sixty-five years the

Scientific American

has been the most widely quoted authority on all matters relating to the progress made in the fields of discovery, invention and scientific news.

Free from dry technicalities, it tells the story of the WORLD'S PROGRESS in a fascinating and practical manner, which makes its weekly visits welcome to the entire family. It is unique among periodical literature because it contains authoritative information which cannot be obtained from any other source.

Subscription price, $3.00 per year.

The Season's Best Club Combinations

Scientific American or American Homes and Gardens	$3.00	
Review of Reviews	3.00	**$4.45**
	$6.00	
Scientific American or American Homes and Gardens	$3.00	
Review of Reviews	3.00	
World's Work	3.00	**$6.80**
Everybody's Magazine	1.50	
	$10.50	
Scientific American or American Homes and Gardens	$3.00	
Everybody's Magazine	1.50	
World's Work	3.00	**$5.35**
	$7.50	
Scientific American or American Homes and Gardens	$3.00	
McClure's Magazine	1.50	
Review of Reviews	3.00	**$5.35**
	$7.50	
Scientific American or American Homes and Gardens	$3.00	
World's Work	3.00	
Delineator	1.00	**$5.10**
	$7.00	
Scientific American or American Homes and Gardens	$3.00	
McClure's Magazine	1.50	
Woman's Home Companion	1.25	**$4.60**
	$5.75	

After February 1st, 1909, 25c. must be added to combinations including Woman's Home Companion.

MUNN & CO., 361 Broadway, New York City

ings and sketches are added. The value of the book is greatly enhanced with the introduction by Mr. Wilson Eyre on the planning of the country house. Mr. Eyre has given such ample evidence of his profound knowledge of this subject that whatever he may have to say upon it has distinct value alike to the architect and the layman.

SANITATION AND SANITARY ENGINEERING. By Wm. Paul Gerhard, C.E. New York: Published by the Author. Pp. 175. Price, $1.50.

Originally published under the title of "Sanitary Engineering," the present work has been greatly enlarged in this new edition. Its specific purpose is to review the whole field of sanitary engineering, and this it does in a very broad way. The scope of the book does not call for a discussion of sanitary processes or of ways and means in sanitary work; but it seeks to emphasize the importance of the sanitary engineer and to make clear his functions in modern life. This is a highly important aspect of the subject, perhaps nowhere discussed so ably or so clearly as here. The author treats at some length of the actual practice of the sanitary engineer, then describes his work in times of epidemics, war and in sudden calamities, presents a review of the whole subject of sanitation for the last fifty years, and concludes with chapters on sanitation in Greater New York and in Russia.

THE SUMMER GARDEN OF PLEASURE. By Mrs. Stephen Batson. Chicago: A. C. McClurg & Co. Pp. 231.

The reader of this volume will be immensely attracted by the very beautiful, if exceedingly impressionistic, paintings, by Osmund Pittman, with which it is illustrated. These comprise thirty-six plates, reproduced in color, and are, for the most part, charmingly done and beautifully reproduced. It is an English book, written for English conditions, and, hence, not always quite so literally available for American conditions as might at first be supposed. But the intelligent flower lover will have no difficulty in translating English conditions into American, and no one can help gaining useful information from the book if it is rightly sought and used. Mrs. Batson writes for the creator of the "plain" garden, although she does not use that word; but she seeks to help those who are cultivating general gardens under general conditions, and thus leaves to other guides information as to the specialistic gardens which are now somewhat in vogue. She specializes, also herself, in presenting plans and suggestions for the flowering garden late in the season—a phase of gardening that well deserves the extensive treatment it receives in this book.

AMERICAN POULTRY CULTURE. By R. B. Sando. New York: The Outing Publishing Co. Pp. 265.

Although intended expressly for the guidance of those who desire to keep only a small flock of birds for pleasure and profit, and appealing directly to the beginner, this book is completely available for those who keep fowl on a larger scale. It is thus largely devoid of technicalities, and is designed, in every way, to meet the requirements of the special class of readers for whom it has been written. The author covers the whole field of his subject, telling his story in a straightforward way, illustrating it with photographs where they are needed, and producing a book of eminent practicability. It is exactly the kind of a book that every beginner in the chicken industry needs, and the old timers will find it quite as useful as well.

The Right Hardware for the Right House

Elaborately designed hardware is entirely out of keeping with a house of rather plain architecture. To secure harmonious results, consult your architect as to the *style* of hardware trimmings you should select, then from among the seventy and more patterns of

Sargent's
Artistic
Hardware

you can choose the particular design that appeals to your sense of the appropriate. Sargent's Hardware is famous for its beauty as well as for its durability and splendid workmanship. If you are building a new home, or remodeling the old one, you should write for

Sargent's Book of Designs —Sent Free

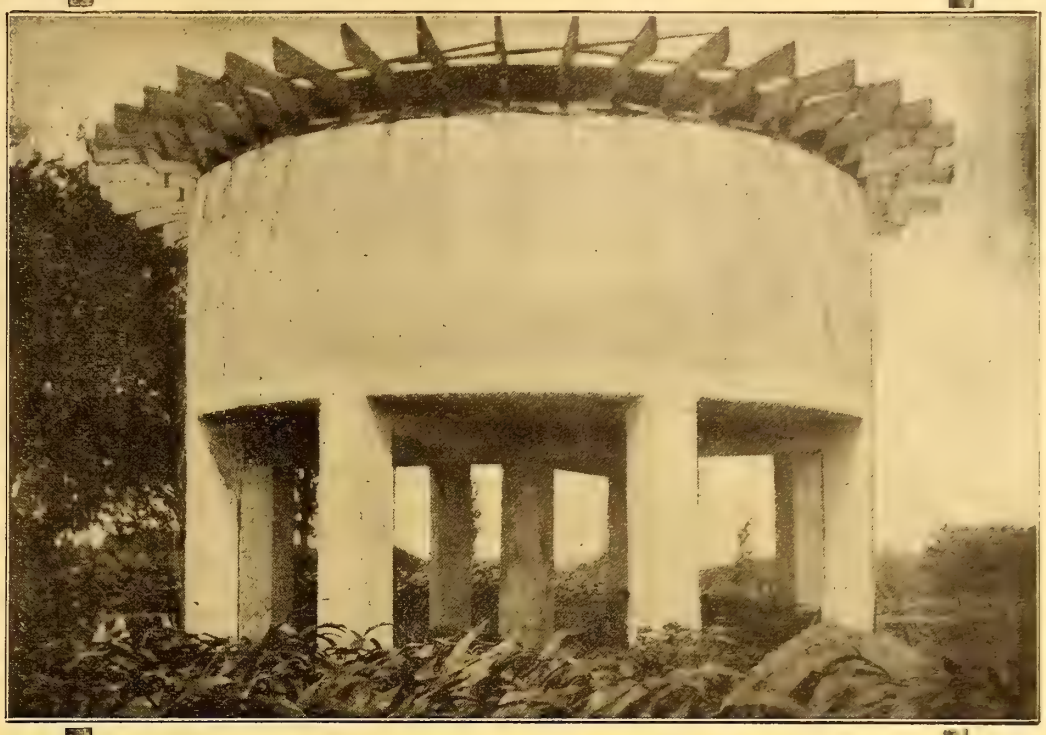
This book illustrates nearly fourscore of the most beautiful patterns ever designed for hardware trimmings. Every style and period of Architecture is represented by several designs.

Those interested in the Colonial should also request a free copy of Sargent's *Colonial Book*. Address

SARGENT & COMPANY
156 Leonard Street, New York

FLOORS

ROOFS



A concrete tank erected on estate of Edmund Tatham, Katonah, New York

Frederick J. Sterner, Architect - - New York
De Lancey A. Cameron, Builder - - New York

Tank designed for storage supply of 15,000 gallons, built entirely of concrete reinforced with Clinton welded wire. Before roof was placed over tank, and during winter months, ice 10 inches thick formed on water stored therein. No cracks or leakage have developed.

Clinton Wire Cloth Company
CLINTON, MASS.

Ceilings

Partitions

Fireproofing Departments:
ALBERT OLIVER, 1 MADISON AVE., NEW YORK

WASHINGTON: Rosslyn Supply Co., Colorado Building
CHICAGO: Clinton Wire Cloth Co., 30-32 River Street
BUFFALO, N. Y.: Buffalo Wire Works Co., Inc.
CLEVELAND, OHIO: Carl Horix, 428 Garfield Building
ST. LOUIS: Hunkins-Willis Lime & Cement Co.
SAN FRANCISCO: L. A. Norris, 835 Monadnock Bldg.
SEATTLE: L. A. Norris, 909 Alaska Building
SYRACUSE, N. Y.: National Construction Company

JUST PUBLISHED

The New Building Estimator

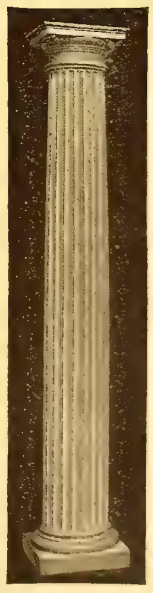
BY WILLIAM ARTHUR

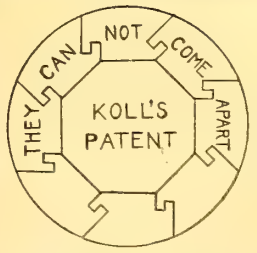
A PRACTICAL guide to estimating the cost of labor and material in building construction from excavation to finish, with various practical examples of work presented in detail, and with labor figured chiefly in hours and quantities. A hand-book for architects, builders, contractors, appraisers, engineers, superintendents and draftsmen. Size, 4¾x6¾ inches, 437 pages, cloth bound. Price, $2.50 postpaid

AN INDISPENSABLE AID TO CONTRACTORS

A circular describing this book will be mailed on application
MUNN & COMPANY, 361 BROADWAY, NEW YORK

Koll's Patent Lock-Joint Columns





The Best for Pergolas, Porches or Interior Use are made exclusively by

Hartmann - Sanders Company

Elston and Webster Avenues
CHICAGO, ILL.

Eastern Office, 1123 Broadway
NEW YORK

Send for Catalogue A-19 of Columns, or A-29 of Sun-dials, Pedestals, etc. (See also "Sweet's Index.")

MENNEN'S

Borated Talcum TOILET POWDER

The Toilet Cabinet is Incompletely Furnished That Does Not Contain All of the Mennen Preparations **Mennen's** Borated **Violet** Talcum **Toilet Powder** and **Mennen's** Borated Talcum **Toilet Powder** are a **comfort** and delight after **bathing.** They **protect** and preserve the delicate skin, relieve **sunburn,** allay **prickly heat** and other **skin** irritations and prevent **chafing.**

Mennen's Borated Talcum **Toilet Powder** is absolutely necessary to **Baby's** comfort and well being.

Mennen's Borated **Skin Soap** (blue wrapper) is delicately perfumed for **toilet** use. It makes an abundant creamy lather which **soothes** and **softens** the **skin.** Its **antiseptic** properties prevent **infection,** and it **cures** or **prevents** the **skin** irritations particularly common among young children.

For **Shampooing** nothing excels **Mennen's** Borated **Skin Soap.** It thoroughly cleanses the scalp and makes the hair very soft and bright.

Mennen's Borated **Tooth Powder** gives the mouth a sense of exquisite cleanness and sweetness. It is an **antiseptic** and **germicide,** and while protecting and preserving the teeth, promotes the health of the entire oral cavity.

Guaranteed by the Gerhard Mennen Chemical Co., under the Food and Drugs Act June 30, 1906. Serial No. 1542.

The **original** and **genuine**—the kind you have always used. Why take chances with new so-called "Baby Powders," when you know that the **genuine Mennen's** Borated Talcum **Toilet Powder** is scientifically prepared from the **purest** materials, and has always given your babies and yourself the **relief** you seek? Don't take any chances with powders of unknown quality, when you can purchase the **genuine** as cheaply as the imitations.

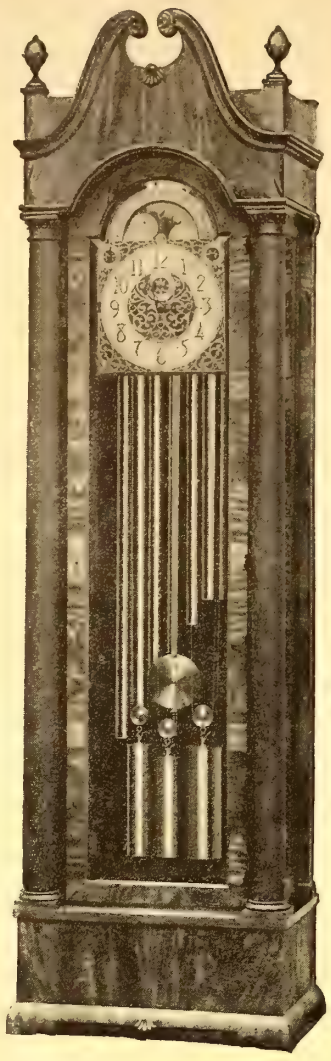
For Sale Everywhere, 25c. or by mail postpaid **GERHARD MENNEN CO.,** **67 Orange Street Newark, N. J.**

Vol. VI AUGUST, 1909 No. 8

NA
100
A572
Hort.

AMERICAN HOMES and GARDENS

$3.00 A YEAR MUNN & COMPANY, Publishers PRICE, 25 CENTS



HALL CLOCKS

Our line comprises the finest and most complete designs of high-class clocks on the market. Our movements are superior in nearly every detail and the purchaser is assured that he can buy the best by ordering a "Waltham."

We will soon have ready for delivery, our new Chiming Movement which chimes either Westminster, Whittington or St. Michaels.

Our "Willard" or Banjo Clock is a model of perfection and appeals to those who desire a first-class article in every respect.

If your local dealer does not sell our line, send direct for illustrated catalogue.

Waltham Clock Company
Waltham, Mass.

Many Uses of a Conservatory

Not only is your conservatory a flower garden, connected with your house and serving you the year round, but it may be a living-room, where the morning sun-bath is enjoyed, or the afternoon tea delightfully served. It adds another unique, attractive room to your home, one from which all the family will get great satisfaction and comfort. Consult us about its construction.

Hitchings & Company

Designing and Sales Offices
1170 BROADWAY, NEW YORK

General Offices and Factory
ELIZABETH, N. J.

JUST PUBLISHED JUST PUBLISHED

CRAFTSMAN HOMES

By GUSTAV STICKLEY

A Book for Architects, Builders, Homemakers and Housekeepers

Containing practical house plans, exteriors and interiors, suggestions for gardens, gates and pergolas, models for furniture, metal work and needlework. The house plans comprise a choice collection of about fifty designs of country, suburban and town houses, bungalows, cottages and cabins, ranging in cost from $500 to $15,000. They have won high recognition as the first fearless expression of an independent national style of building, that meet the needs and characteristics of the American people.

CONTENTS: Craftsman houses and plans, halls and stairways, living-rooms, dining-rooms, porches and terraces, the effective use of cobblestones, gates and gateways, gardens, exterior features and materials, wall space and color schemes, interior woodwork and structural features, choice of woods, floors and how to finish them, treatment of interior woodwork, decoration and finishing, home cabinet-making, and metal work.

SIZES: 8½ x 11 inches. Fine India tint plate paper. Duotone sepia ink. Over 200 half-tone engravings of exteriors and interiors. Four full-page color plates and portrait sketch. Bound in full linen crash. Price, $2.00 net. Postage, $2.24.

MUNN & COMPANY, 361 Broadway, New York

The SCIENTIFIC AMERICAN BOY

By A. RUSSELL BOND

12mo. 320 Pages. 340 Illustrations. Price, $2.00, Postpaid.

A STORY OF OUTDOOR BOY LIFE, suggesting a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. Complete practical instructions are given for building the various articles. The book contains a large number of miscellaneous devices, such as scows, canoes, windmills, water wheels, etc.

MUNN & CO. Publishers of "SCIENTIFIC AMERICAN" 361 Broadway, New York

JUST PUBLISHED

AMERICAN RENAISSANCE

A Review of Domestic Architecture By Joy Wheeler Dow, Architect

ILLUSTRATED *by* NINETY-SIX HALF-TONE PLATES

EASTOVER (Miniature). THE GARDEN FRONT
From "American Renaissance"

This book is a carefully prepared history of American Domestic Architecture from Colonial days, illustrated in the most elaborate manner and worthy a place in every architectural library, and should be read by every one who desires to familiarize himself with Colonial architecture and its effect on the architecture of to-day.

CONTENTS.—Chapter I., Ethics; II., Art and Commercialism; III., The Ancient Regime—Andrew Jackson; IV., Humble Beginnings of a National School; V., The Grand Epoch; VI., Early Nineteenth Century Work; VII., The Transitional Period; VIII., Reign of Terror—Its Negative Value; IX., Fashion in Architecture; X., Adaptation; XI., Concerning Style; XII., Conclusion.

HANDSOMELY BOUND IN CLOTH, GILT TOP

Price, $4.00 net

MUNN & CO., PUBLISHERS, NEW YORK

The Wanamaker Store is now enlarged and specialized

Women's Store | Galleries | Men's Store
Jewelry Store | Furnishing and Decoration | Book Store
Housewares Basement | Pianoforte Salons | Sporting-Goods Store

INTERNATIONAL MAIL ORDER SERVICE

THREE INVITATIONS TO HOME LOVERS

WHO, among the countless visitors to the Wanamaker Stores, can forget the first view of the Galleries of Furnishing and Decoration, and the quick, delicious feeling of surprise, in the superbly appointed Piano Salons, the exhibits of a long perspective of the world's famous Pianos and the daily concerts in the great Auditorium; the pleasing sense of novelty in the beautiful Ceramic Galleries, Crystal Alcoves, Picture and Art Salons; the joyful consciousness of entering on a long anticipated pleasure in the splendid Drapery Gallery, the three vast Furniture Galleries, and the famous "House Palatial," whose Furnishing Arts exhibits delight the senses and thrill the hearts of A MILLION AND A HALF VISITORS ANNUALLY!

(1) Those who will be in New York during vacation season are cordially invited to be our guests, and mingle with the home lovers, from all over the country, who find the Galleries' displays so eloquent in suggestion and inspiration in the Home-Making Arts; and to revel in the displays in the Women's Store—the old A. T. Stewart Building.

The "Rushbrooke" Tea Table
No. 366, Solid Mahogany
$48.00

(2) Those who are unable to visit us, and who will write, will be mailed (without charge, postpaid) a copy of the daintily illustrated Wanamaker "GUIDE BOOK," which tells all about both stores, the latest fashions in Home Furnishing and Women's and Men's Apparel, and describes our various catalogues and folios, our system of sending samples, and the Correspondence Advisory Bureau of the Wanamaker International Mail Order Service.

The Chippendale Tea Table, here illustrated, is taken from our folio of "FOREFATHERS' FURNITURE" and is one of four hundred and fifty-one pieces, therein shown.

(3) Those who have a room—or house—to decorate and furnish, and who will send us a rough sketch, or blue print, will receive samples, color schemes, pictures of furniture, suggestions and estimates, if they will address our "DECORATIVE ADVISORY BUREAU," Section B—no charge for this service. Send communications to the New York Store.

JOHN WANAMAKER
Philadelphia NEW YORK Paris

Sample and Circular Free

A House Lined with

Mineral Wool

as shown in these sections, is ***Warm in Winter, Cool in Summer,*** and is thoroughly DEAFENED.
The lining is vermin proof; neither rats, mice, nor insects can make their way through or live in it. MINERAL WOOL checks the spread of fire and keeps out dampness.

CORRESPONDENCE SOLICITED

U. S. Mineral Wool Co.
140 Cedar St., NEW YORK CITY

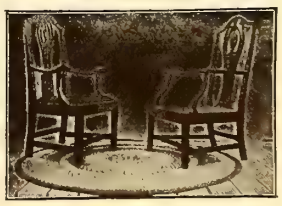
THE ENOS COMPANY announce the removal of their Salesrooms to No. 36 West 37th Street, where may be found a complete exhibition of the best forms of lighting fixtures.

The ENOS COMPANY Makers of Lighting Fixtures
NEW YORK
Office and Factory: 7th Av. and 16th St. Salesrooms: 36 West 37th St.
Boston: H. F. Esterbrook, Inc., 9 Park Street
Baltimore: 519 North Charles St.
Pittsburg: G. P. Norton, Century Building
St. Louis: N. O. Nelson Mfg. Co.
Portland, Ore.: J. C. English Co., 128 Park St.
Chicago: W. K. Cowan & Co., 203 Michigan Blvd.
San Francisco: 1748 California St.
Toronto: 94 King St. West
Spokane: Cutter & Plummer, Inc.
Seattle: Cox & Gleason, 1914 Second Ave.

ANDREWS, JACQUES & RANTOUL, Architects, Boston

DEXTER BROTHERS'
English Shingle Stains
produce soft even shades in Moss Greens, Tile Reds and beautiful Silver Grays.

PETRIFAX
Damp-Resisting
INTERIOR and EXTERIOR COATING FOR BRICK, CONCRETE or CEMENT
"If the coat fits, put it on"
DEXTER BROTHERS COMPANY
103-105-107 Broad Street, BOSTON
AGENTS: H. M. Hooker Co., 128 W. Washington St., Chicago; W. S. Hueston, 6 E. 30th St., New York; John D. S. Potts, 218 Race St., Philadelphia; F. H. McDonald, 619 The Gilbert, Grand Rapids, Mich.; F. T. Crowe & Co., Seattle, Spokane, Tacoma, Wash., and Portland, Ore.; M. D. Francis, Atlanta, Ga.; F. S. Coombs, Halifax, N. S.



Antiques
Photographs and descriptions of genuine antique pieces sent on request. List your wants of antiques with me.
RALPH WARREN BURNHAM
IPSWICH IN MASSACHUSETTS

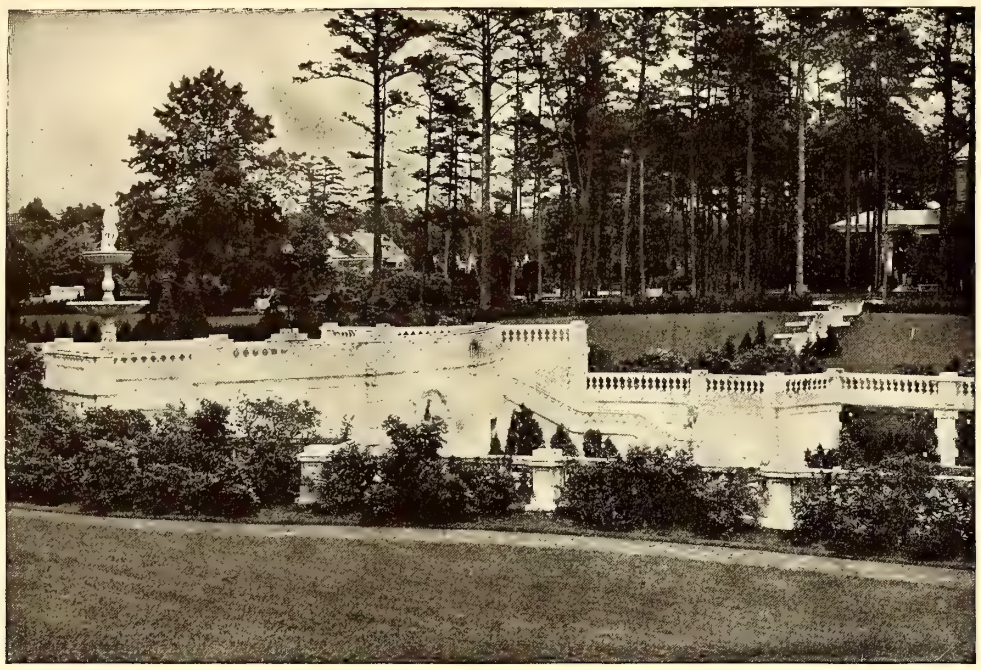
Wall Papers and Wall Coverings *A Practical Handbook*
For Decorators, Paperhangers, Architects, Builders and House Owners, with many half-tone and other illustrations showing latest designs
By ARTHUR SEYMOUR JENNINGS
Includes characteristic designs in vogue to-day. Gives reliable information as to the choice of Wall Papers and describes the practical methods of applying them
One Large 8vo Volume. Cloth. Price $2
MUNN & CO., 361 Broadway, NEW YORK

SMITHSONIAN
AUG 12 1985
LIBRARIES

American Estates and Gardens

By BARR FERREE

Editor of "American Homes and Gardens," Corresponding Member of the American Institute of Architects and of the Royal Institute of British Architects



4to. 11x13½ inches. Illuminated Cover and 275 Illustrations. 306 Pages.

Price, $10.00

A sumptuous book, dealing with some of the most stately houses and charming gardens in America. The illustrations are in nearly all cases made from original photographs, and are beautifully printed on double coated paper. Attractively bound. The book will prove one of the most interesting books of the year and will fill the wants of those who desire to purchase a luxurious book on our American Homes.

Munn & Company

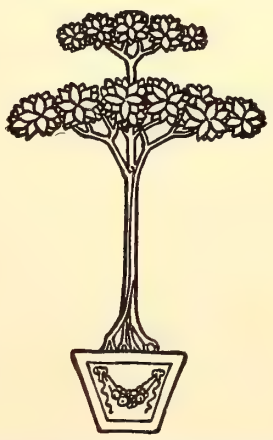
Publishers of "Scientific American"

361 BROADWAY, NEW YORK

THE NEW AGRICULTURE

By
T. BYARD COLLINS

8vo. Cloth. 376 Pages
100 Illustrations
Price, $2 00, Postpaid



THIS new and valuable work sets forth the changes which have taken place in American agricultural methods which are transforming farm life, formerly so hard, into the most independent, peaceful and agreeable existence. Farm life to-day offers more inducements than at any previous period in the world's history, and it is calling millions from the desk. The present work is one of the most practical treatises on the subject ever issued. It contains 376 pages and 100 illustrations.

In brief, the Contents are as follows:

CHAPTER I. This chapter contains a general statement of the advantages of farm life.

CHAPTER II. Deals with the vast systems of irrigation which are transforming the Great West, and also hints at an application of water by artificial means in sections of the country where irrigation has not hitherto been found necessary.

CHAPTER III. Gives the principles and importance of fertilization and the possibility of inoculating the soil by means of nitrogen-gathering bacteria.

CHAPTER IV. Deals with the popular awaking to the importance of canals and good roads, and their relation to economy and social well-being.

CHAPTER V. Tells of some new interests which promise a profit.

CHAPTER VI. Gives a description of some new human creations in the plant world.

CHAPTER VII Deals with new varieties of grain, root and fruit, and the principles upon which these modifications are effected and the possibilities which they indicate.

CHAPTER VIII. Describes improper methods in agricultural practice.

CHAPTER IX. Devoted to new machinery by which the drudgery of life on the farm is being eliminated, making the farm a factory and the farmer the manager of it.

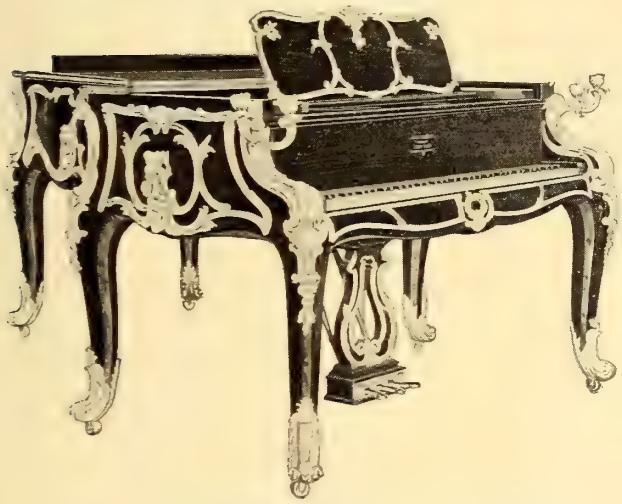
CHAPTER X. Shows the relation of a body of specialists to the American farmer, who can have the most expert advice upon every phase of his work without any expense whatever to himself.

MUNN & CO., Publishers 361 Broadway, NEW YORK

IN the designing and manufacture of Period and Art cases to harmonize with any plan of architecture or decoration, Steinway and Sons are the recognized leaders, as in all other departments of piano making—a distinction they have enjoyed for three generations. Every

STEINWAY
ART PIANO

is a true representation of its respective period—a veritable gem of beauty and perfection. A visit to the Steinway Studios will reveal that, in these masterpieces of pianocraft, music and decorative art are so deftly blended that they at once command the admiration and praise of architect, artist and connoisseur.



Steinway Parlor Grand Piano in the period of Louis XV, mahogany with ormolu mounts.

STEINWAY & SONS,
Steinway Hall, 107-109 East 14th Street, New York
(Subway Express Station at the Door)

COLONIAL houses demand simple treatment in hardware ornamentation. A design in French Renaissance or L'Art Nouveau would be incongruous. For homes of Colonial Architecture, Sargent & Company provide a wide range of choice in hardware trimmings.

Sargent's Artistic Hardware

adds not only to the artistic beauty of any home, but increases its selling value as well. The vast superiority in appearance and the wearing qualities of Sargent's Hardware more than offset any slight increase in cost over inferior goods. Even if the most expensive goods are selected, the cost of the hardware is but a small proportion of the total cost of building.

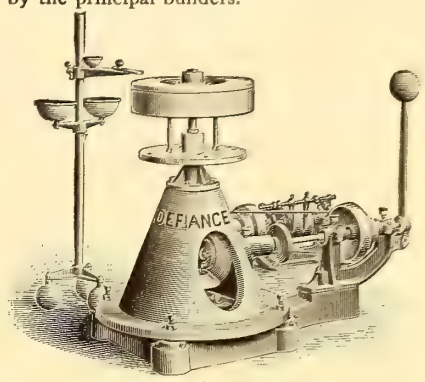
Sargent's Book of Designs—Sent FREE

illustrates a number of hardware patterns especially for homes of Colonial Design. But among the seventy and more styles pictured can be found designs appropriate for any style, period or architectural motif. In addition to the Book of Designs we will send free to anyone requesting it our **COLONIAL BOOK**—showing Cut Glass Knobs, Knockers, etc. Address

SARGENT & CO., 156 Leonard St., New York

Automobile Owners and Drivers ATTENTION!

Stop that constant vibration by having the fly-wheel of your engine given a perfect running balance. This machine is used by the principal builders.



Patent Motor Fly-Wheel Balancer

MANUFACTURED BY
THE DEFIANCE MACHINE WORKS
DEFIANCE, OHIO

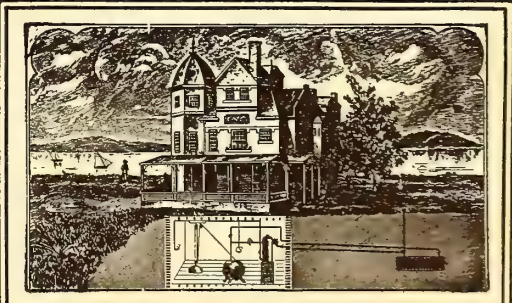
Garden Terra Cotta
Italian Flower Pots

THE GALLOWAY POTS have met the popular demand for an ornamental pot, having strength, durability and artistic design at a reasonable price. Made in three shapes and all sizes.

Our Booklet, "Terra Cotta and Pottery for Garden and Home," filled with beautiful designs of ***Pots, Vases, Sun Dials, Benches*** and other pieces of garden furniture, will be sent upon request.

William Galloway

3222 Walnut Street PHILADELPHIA



THE **most modern, and best illuminating and cooking** service for isolated homes and institutions, is furnished by the **CLIMAX GAS MACHINE.**

Apparatus furnished on **TRIAL** under a **guarantee to be satisfactory** and in advance of all other methods.

Cooks, heats water for bath and culinary purposes, heats individual rooms between seasons—drives pumping or power engine in most efficient and economical manner—also makes brilliant illumination. **IF MACHINE DOES NOT MEET YOUR EXPECTATIONS, FIRE IT BACK.**

Send for Catalogue and Proposition.

Low Price **Better than City Gas or Electricity and at Less Cost.**
Liberal Terms

C. M. KEMP MFG. CO.
405 to 413 E. Oliver Street, Baltimore, Md.

ANY BEAM

ABUTTING ITS SUPPORT IS BEST HELD ON OUR

JOIST HANGERS

Made in over 100 listed sizes and any modification to order.

LANE BROS. CO. (The Door Hanger Manufacturers) 434-466 PROSPECT ST. POUGHKEEPSIE, N. Y.

New Papers on Concrete

Reinforced Concrete

Concrete Building Blocks

Scientific American Supplement 1543 contains an article on Concrete, by Brysson Cunningham. The article clearly describes the proper composition and mixture of concrete and gives the results of elaborate tests.

Scientific American Supplement 1538 gives the proportion of gravel and sand to be used in concrete.

Scientific American Supplements 1567, 1568, 1569, 1570 and 1571 contain an elaborate discussion by Lieut. Henry J. Jones of the various systems of reinforcing concrete, concrete construction, and their applications. These articles constitute a splendid text book on the subject of reinforced concrete. Nothing better has been published.

Scientific American Supplement 997 contains an article by Spencer Newberry, in which practical notes on the proper preparation of concrete are given.

Scientific American Supplements 1568 and 1569 present a helpful account of the making of concrete blocks by Spencer Newberry.

Scientific American Supplement 1534 gives a critical review of the engineering value of reinforced concrete.

Scientific American Supplements 1547 and 1548 give a resumé in which the various systems of reinforced concrete construction are discussed and illustrated.

Scientific American Supplements 1564 and 1565 contain an article by Lewis A. Hicks, in which the merits and defects of reinforced concrete are analysed.

Scientific American Supplement 1551 contains the principles of reinforced concrete with some practical illustrations by Walter Loring Webb.

Scientific American Supplement 1573 contains an article by Louis H. Gibson on the principles of success in concrete block manufacture, illustrated.

Scientific American Supplement 1574 discusses steel for reinforced concrete.

Scientific American Supplements 1575, 1576 and 1577 contain a paper by Philip L. Wormley, Jr., on cement mortar and concrete, their preparation and use for farm purposes. The paper exhaustively discusses the making of mortar and concrete, depositing of concrete, facing concrete, wood forms, concrete sidewalks, details of construction of reinforced concrete posts, etc.

Scientific American Supplement 1583 gives valuable suggestions on the selection of Portland cement for concrete blocks.

Scientific American Supplement 1581 splendidly discusses concrete aggregates. A helpful paper.

Scientific American Supplements 1595 and 1596 present a thorough discussion of sand for mortar and concrete, by Sanford E. Thompson.

Scientific American Supplement 1586 contains a paper by William L. Larkin, on concrete mixing machinery in which the leading types of mixers are discussed.

Scientific American Supplement 1626 publishes a practical paper by Henry H. Quimby on concrete surfaces.

Scientific American Supplement 1624 tells how to select the proportions for concrete and gives helpful suggestions on the treatment of concrete surfaces.

Scientific American Supplement 1634 discusses forms for concrete construction.

Scientific American Supplement 1639 contains a paper by Richard K. Meade, on the prevention of freezing in concrete by calcium choloride.

In **Scientific American Supplement 1605** Mr. Sanford E. Thompson thoroughly discusses the proportioning of concrete.

Scientific American Supplement 1578 tells why some fail in the concrete block business.

Scientific American Supplement 1608 contains a discriminating paper by Ross F. Tucker on the progress and logical design of reinforced concrete.

EACH NUMBER *of the* SUPPLEMENT COSTS 10 CENTS. A SET *of* PAPERS CONTAINING ALL THE ARTICLES ABOVE MENTIONED WILL BE MAILED *for* $3.40

Order from your Newsdealer or from

MUNN & CO., Publishers, 361 BROADWAY, New York City

MAKING A COUNTRY HOME

By E. P. Powell

VI.—THE EVOLUTION OF THE AMERICAN COUNTRY HOUSE

WHEN New Englanders started on their pioneering westward the cottage style was dominant in New England. The building was so very solid that a good many samples still endure. The beams were pinned together at every joint, and all the braces, with pins of beech wood, running through timbers not less than one foot in diameter. After settling a trifle these pins became sufficiently bent to make it impossible to drive them out. To tear down such a house needed the ax and a cross-cut saw. The clapboards were left until they became moss-covered, although generally retaining their position. There were holes enough through which bumble bees entered and made their homesteads. I have known honey bees to find spaces large enough for a large storage of honey. Bumble bees took their honey from thistles which were abundant not only in the pastures, but in the streets; and from the hollyhocks which our fathers and mothers planted everywhere. I remember a row that went clear round a large field of corn. The houses were too flat roofed, and frequently leaked. The attics were constructed so that little heat could be wasted from the lower rooms. The kitchen was the heart of the house, and one-third of it was a great open fireplace. Here the family assembled for paring bees, knitting bees and all sorts of games. Here the neighbors visited and gossiped. Out of the kitchen opened one or more bedrooms, and a stairway to the small attic rooms, sometimes used for sleeping. The spare room also opened from the kitchen, when not in use held the spinning wheel and the rolls. The cellar of this house was rarely more than a dugout where the vegetables were stored. The beams were low and the windows generally entirely lacking. Furniture was largely home-made, especially the stools, the tables and a possible lounge. There was one small table, called the stand, which held the candle by which the mother could see to read the Bible just before retiring at nine o'clock. The smaller children slept in a trundle-bed, fitted to roll under the larger bed of the parents during the daytime.

This style of house was the germ of those which have been evolving through the Nineteenth Century and up to the present time. The pioneers into New York very soon took a distinct step forward both in the style of architecture and in the comfort provided. The cellars were raised well above the ground, and were ventilated as well as lighted. The floors, however, were not yet grouted and drainage was very inadequate. Such rooms were entirely unsafe to be under a dwelling, for they contained the mingled odors of decaying cabbage, mold and other waste material. The kitchen grew smaller, and the number of rooms increased. The brick oven was still built into the side of this house, and was used for Thanksgiving feasts. There was no wasting of coal, for no one had yet heard of either anthracite or bituminous. Every farmer had his own wood lot, and coal meant half-consumed scraps of maple and beech. The cleanest sticks of hickory or maple were none too good for the kitchen fire; and I have seen large barns built entirely of select black walnut. The door of this house generally opened at a corner, and directly into the living-room, which was still the kitchen. The parlor put in an appearance early in the century, and was furnished with

a black hair-cloth sofa, a rocking-chair and six cane-bottomed chairs. On a cherry table lay the family Bible, a copy of "Josephus," and another of "Foxe's Book of Martyrs." On the shelf over the fireplace stood two iron candlesticks for common use, and two of brass for company. Everybody knew how to snuff a candle with his fingers and not get burned, but snuffers were provided on a little tray, that worked much like shears. Stoves began to innovate, and a stovepipe ran up through the floor to warm the attic. The warming-pan was provided for the spare bed, and a foot-stove was carried to church with a basin of coals inside for the use of women. This was the only heat that orthodoxy allowed inside the churches.

This fashion held on until about 1840. About this time the gables were turned around, so that the side of the house faced the street. The door was invariably placed in the middle, and opened into a capacious hall. Style demanded one large room on each side of this hall, and a stairway reaching the second floor where the same arrangement was repeated. One side of the hall, both upstairs and down, was devoted to visitors, and when these were lacking were carefully shut up against dust. The result was a charge of must that permeated every article as well as the walls. The attic now became a garret or third story, a sort of storeroom for everything that was sacrificed to fashion. It generally contained also a chest of old papers, for as yet every paper or pamphlet was sacredly preserved. To the rear was almost surely a wing, including the kitchen and "buttery," for the kitchen was no longer the soul of the home. The old-fashioned stoop gave way to porches—the stoop was an inside hollow space, and the porch was the same space outside. The stoop was borrowed from the Dutch, and was a cozy social place for resting after meals in warm weather. One more token of pride and style was the displacement of the seven by nine panes of glass; these becoming eight by ten.

About 1840 the dominance of classical studies in the schools and academies began to tell on home life. A few New England homesteads had already been standing behind huge porticos large enough for Socrates and his pupils to discuss world problems. Now these classical inspirations began to follow New England colleges and the whole line of westward migration. It was in 1825 that the Erie Canal was finished, and the tide of pioneers flowed over New York and into Ohio and Michigan. Michigan University was founded as early as 1818. It was, however, fully 1840 before the classical spirit affected common life. This Greek-temple business, however, fortunately did not last very long with our Yankee forebears. It did one good thing in the passing, it gave a large stimulus to out-door life, for the porch was seldom pinched, and even our modern veranda builders can take a hint from its roominess.

An evolution of a more complex sort began about 1850. We were all burning coal at last, and there were half a dozen stoves to a roomy house, with sometimes a grate or two. These stoves were a mass of gloomy iron, and it was a sorry failure that tried to make them ornamental with open fronts. This use of coal and stoves accomplished this much, that they broke up concentration, and provided more private rooms and individuality. Houses lost their uniformity, and each occupant of a house, now having his own room, liked to have it provided with a closet, and a bayed window or porch. A vast variety of styles was the consequence. Independence was in the ascendency and criticism was free. There were some very cozy and some very beautiful houses built, but this made all the

When You Buy Hose BUY RUBBER HOSE

That's the only kind of hose that will wear. And because a hose has a rubber cover don't think it is necessarily rubber inside. The usual hose is canvas daubed with rubber cement and wrapped around a mandrel.

The finest hose in the world is

Electric Garden Hose

Here is how it's made. A series of woven jackets in one piece of high-test cotton fabric alternating with *layers of fine grade rubber.* The whole vulcanized into one solid seamless piece. 400 lbs. water pressure won't burst it. You can buy any length up to 500 feet.

That construction makes Electric *wear twice as long as any other hose.* Isn't it worth a cent or two more not to begin to patch and repair before the season is half over?

Before you spend a penny on hose ask your hardware dealer or seedsman to show you

Electric Hose

Electric Hose & Rubber Co.
Wilmington, Del.

DON'T BE KNOCKED OVER

By Stenches from Backyard Debris

Why not look up the Stephenson Method, seven years on the market, and if satisfied protect the health of your family by installing **The Stephenson**

Underground Garbage Receiver

which removes all objections of the old swill-tub?

The Stephenson Underground Refuse Receiver for Ashes.
The Stephenson Underground Earth Closets for Camps.
The Stephenson Portable Metal House for Above.
The Stephenson Spiral Ribbed Ash Barrel, outwears two.

SOLD DIRECT

C. H. STEPHENSON, Manufacturer
21 Farrar Street Lynn, Mass.

WE MAKE THE PERMANENT KIND OF

RUSTIC WORK

that is thoroughly distinctive and which gives that artistic finish to the country place.

Rustic Tea Houses, Boat and Bath Houses, Arbors, Pergolas, Back Stops for Tennis Courts; Rustic Bridges for Ravines, Entrance Gates, Chairs, Tables, Flower Stands, etc., in fact, Rustic Work of every description.

Catalog and Sketches Sent upon Application

RUSTIC CONSTRUCTION WORKS, 33 Fulton Street, New York City

This Tea House on exhibition in our warerooms ready for immediate shipment

We Want To Tell You How

We Put Every Cent of the Dealers Profits into Your Pocket

You can save not only the dealer's profits but his excessive charges for installation and repairs by dealing direct with the manufacturers. You can keep in your own pocket at least one-third the retail price of a heating plant. Let us tell you all about the

Jahant Down Draft Furnace

Only $10 down and $10 per month, with freight prepaid east of the Mississippi River.

This wonderful furnace has proven its superiority above all others during the last 30 years. It is without doubt the very best heating system for your home. It ***saves*** from ⅓ to ½ in fuel bills, because the patented "down-draft" burns hard or soft coal—wood or lignite—without cinders or clinkers, giving full heating value of every particle of fuel. Needs less attention than any furnace you ever saw. A strong "Guaranty Bond" goes with every Jahant, which allows you ***a 360 days free use of the furnace.*** You run no risk, as we supply special plans, full directions and give ***free all necessary tools,*** so that any man who can drive a nail can successfully install a Jahant.

No matter what make or system of heating you are considering, let us tell you more about the many conveniences and good points of our furnace; it's economy, it's healthfulness and how you can save money.

Write today for our book No. 17

The Jahant Heating Company, Akron, Ohio.

Cottage Designs

No. 1. Cottage Designs
Twenty-five designs, ranging in cost from $600 to $1,500

No. 2. Low Cost Houses
Upward of twenty-five designs, costing from $750 to $2,500

No. 3. Modern Dwellings
Twenty designs, at costs ranging from $2,000 to $5,000

No. 4. Suburban Homes
Twenty selected designs, costing from about $3,000 upward

By far the most complete collection of plans ever brought out • Illustrated with full-page plates • •

$1 each • Sold separately

MUNN & COMPANY, PUBLISHERS
361 BROADWAY :: NEW YORK

The Beauty of Quarter-sawed Oak

is brought out to perfection by our process of making veneers and by the careful attention given to the finish of each and every door.

Cross section showing construction of 1⅜ inch door.

The name "*Morgan*" is branded on each door.

are perfect doors. Built of several layers with grain running crosswise, pressed together with waterproof glue, making shrinking, warping or swelling impossible. Veneered in all varieties of hardwood—birch, plain or quarter-sawed red or white oak, brown ash, mahogany, etc.

Morgan Doors are light, remarkably strong and absolutely perfect in every detail of construction. Each **Morgan Door** is stamped "*Morgan*" which guarantees quality, style, durability and satisfaction.

In our new book, "The Door Beautiful," **Morgan Doors** are shown in their natural color and in all styles of architecture—Colonial, Empire, Mission, etc., and it is explained why they are the best and cheapest doors for permanent satisfaction in any building. ***A copy will be sent on request.***

Architects: Descriptive details of Morgan Doors may be found in Sweet's index, pages 678 and 679.

Morgan Company, Dept. A, Oshkosh, Wisconsin.

Morgan Sash and Door Company, Chicago, Ill.
Morgan Company, Oshkosh, Wisconsin. Morgan Company, Baltimore, Maryland.

CEMENT

Its Chemistry, Manufacture & Use

Scientific American Supplement 1372 contains an article by A. D. Elbers on tests and constitution of Portland cement.

Scientific American Supplement 1396 discusses the testing of cement.

Scientific American Supplement 1325 contains an article by Prof. William K. Hatt giving an historical sketch of slag cement.

Scientific American Supplements 955 and 1042 give good accounts of cement testing and composition, by the well-known authority, Spencer B. Newberry.

Scientific American Supplements 1510 and 1511 present a discussion by Clifford Richardson on the constitution of Portland cement from a physico-chemical standpoint.

Scientific American Supplement 1491 gives some fallacies of tests ordinarily applied to Portland cement.

Scientific American Supplements 1465 and 1466 publish an exhaustive illustrated account of the Edison Portland cement works, describing the machinery used.

Scientific American Supplement 1519 contains an essay by R. C. Carpenter on experiments with materials which retard the activity of Portland cement.

Scientific American Supplement 1561 presents an excellent review by Brysson Cunningham of mortars and cements.

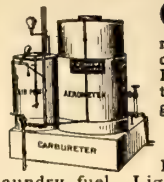
Scientific American Supplement 1533 contains a resumé of the cement industry and gives some valuable formulae.

Scientific American Supplement 1575 discusses the manufacture of hydraulic cement. L. L. Stone is the author.

Scientific American Supplements 1587 and 1588 contain an able paper by Edwin C. Eckel on cement material and industry of the U. S.

Any one of these Supplements will be sent for 10 cents. The entire set costs $1.60, and constitutes an invaluable text book on the subject. Order from your Newsdealer or from

MUNN & COMPANY, 361 Broadway, New York



Country Homes

may enjoy city comforts and conveniences *at less cost* than Kerosene, Acetylene or Electricity, with none of their dangers, by using the *Automatic*

Economy Gas Machine

Produces light, kitchen and laundry fuel. Lighted the same as electric, but without batteries. Write for booklet, "*The Economy Way.*"

ECONOMY GAS MACHINE CO., Sole Mfrs.,
437 Main Street Rochester, N. Y.

WIZARD BRAND
1 BARREL EQUALS
4 WAGON LOADS
STABLE
MANURE

Sheep Manure

Kiln dried and pulverized. No weeds or bad odors. **Helps nature hustle.** For garden, lawn, trees, shrubs, fruits and house plants.

$4.00 **LARGE BARREL, Cash with Order. Delivered to your Freight Station.**

Apply now.

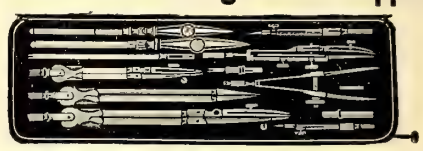
The Pulverized Manure Co., 21 Union Stock Yards, Chicago.

St. Louis, Mo. Baltimore, Md

F. Weber & Co.

1125 Chestnut St., Philadelphia, Pa.

Architects' and Engineers' Supplies



"FABRIANO" Hand-Made Drawing Papers
Superior to any other hand-made paper
F. Weber & Co.'s Illustration Boards, Air Brushes and Materials

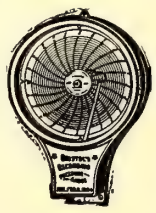
STANDING SEAM ROOF IRONS

CLINCH right through the standing seam of metal roofs. No rails are needed unless desired. We make a similar one for slate roofs.

Send for Circular

Berger Bros. Co.
PHILADELPHIA

PATENTED



BRISTOL'S RECORDING THERMOMETERS

make continuous records of atmospheric temperatures, and are designed for both indoor and outdoor temperatures. Send for new catalogues.

THE BRISTOL COMPANY, WATERBURY, CONN.
NEW YORK *Branches* CHICAGO

JUST PUBLISHED

THIRD EDITION OF

KIDDER'S Churches and Chapels

By F. E. KIDDER, Architect

This edition has been thoroughly revised by the author, and enlarged, many new designs being added, including several new designs for Catholic churches. There are 120 illustrations in the text and more than **50 full-page plates.** The book contains a large number of plans and perspectives of churches of varying costs. Besides this there is much concise and practical information relating to planning and seating; details of Construction, Heating and Ventilation, Acoustics, etc., making it in its present form

The Best American Book on Church Design and Construction

One oblong quarto volume. Price, net, $3.00

Munn & Co., 361 Broadway, New York City

more conspicuous the lot of those whose homes had hardly a suggestion of improvement.

The color of the cottage of 1800 was generally red; that of the 1820, was likely to be Colonial yellow; of the 1830 house, white with green blinds; while the 1840 house was equally white, but the color of the blinds was brown or chocolate or even blue. The 1850 house shows the neutral tints; that is, the color of the soil. The reason for this was that houses had not yet escaped the old conventionalism which planted them close to highways, where they got a liberal supply of dust. There was nothing in front except a door-yard or yard for the door. This, however, began to grow in size and furnish an opportunity for art in the way of fences. Thousands of neutral-tinted houses yet remain, but the passage of a stock law has pulled down fences all over the country; and houses are slowly shifting backward, with fine tree lawns and shrubberies. It was quite natural that street improvement should follow the stock law; bull thistles be banished, and double rows of trees make our highways park-like. We are even beginning to line our streets with fruit trees.

The changes indoors were as marked as those out of doors. Biddy appeared about 1840, and by 1850 she had the kitchen all to herself. The family vacated this apartment altogether; even the housewife must have her sewing-table elsewhere. The parlor gave way to a reception-room, which generally took the place of the hall, and was used for welcoming neighbors. The passage of the kitchen had been the passage of the family room, and a substitute was sadly needed—and it soon was devised. In the earlier days papering walls was seldom practised, but they were not seldom ornamented with pictures obtained from any conceivable source. 1830 covered the walls with great red peonies; 1840 went to more delicate sprays and columns; 1850 began to talk of household art, and by 1880 conventional flowers yielded to colors. About this time also the houses, having been shoved farther back from the street, began to indulge in bright hues of red and green and yellow, more or less intermingled. Where ugliness existed these colors have had the effect of making it more conspicuous, and the confusion of colors opened the way to monstrous blunders in the way of taste; but the entire breakdown of conformity followed, and everybody studies household art indoors and out.

This house evolution is not an unimportant feature of American history. It moved all the way straight forward from the simple to the complex, and marked distinct social changes. The future house will probably move along the same lines; that is, of retreat from the street; independence in architecture, and a much more marked development of individual taste and life. It will be more largely an out-of-doors affair, with very spacious verandas, sun-bath windows, sleeping rooms and dining-rooms that can be thrown wide open to sunlight and air. It will aim at letting in out of doors, so that we can enjoy all the landscape surroundings furnished by nature. Now that free-mail delivery widens the horizon and brings the country house closer to the run of social life, less importance will be attached to street happenings. The street was formerly the newspaper. The coming house will be a retreat more than a residence. It will grow up around our wants, rather than be a copy of other people's conveniences. Going much farther back from the street, it will secure a location where drainage will be easy and sanitation will be perfect. It will be more fond of trees and shrubbery and care less for formal flower beds. It will be homeful in every part, and

(*Continued on page xxiv*)

Locomobile
1910

Locomobile cars for 1910 combine the superior reliability and durability for which our product is famous, with exceptional silence in operation and notable easy riding qualities

"30" Locomobile Shaft Drive
"40" Locomobile Chain Drive
Touring Cars, Roadsters,
Limousines, Landaulets.

THE LOCOMOBILE COMPANY OF AMERICA
BRIDGEPORT, CONN.

NEW YORK BOSTON CHICAGO
PHILADELPHIA SAN FRANCISCO

MEMBER ASSOCIATION OF LICENSED AUTOMOBILE MANUFACTURERS

Send for booklet giving advance information regarding 1910 models

Science for the Evenings

The Heavens Without a Telescope

A MOVING PICTURE OF THE UNIVERSE

The Only Combination Sun, Moon, Star and Planet Map

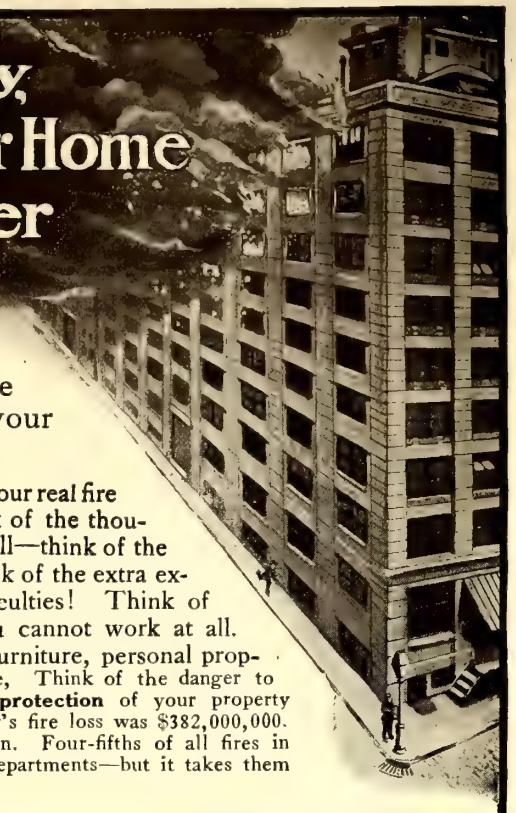
Every Stellar body accurately placed for any date for the next twenty years, in the Northern Hemisphere. Indorsed by leading scientists. Requires no technical knowledge to use it. Complete mastery of the heavenly bodies in a few hours.

Most graphic way of interesting all in the wonderful planetary system of the Universe. Chart is 15 inches square, with revolving disk map showing all stars. Made of heavy cardboard.

Special Offer. **For a limited time only, we offer our readers this splendid Planisphere at a special reduced price of $3.00, postpaid. Send for descriptive circular.**

MUNN & COMPANY, 361 Broadway, New York

Your Factory, Your Office, Your Home are in danger



You never can tell what hour of the day or night a fire will break out in your factory, your office or your home.

You know that your insurance would not repay your real fire loss. If you have a fire in your **factory**—think of the thousands of dollars you lose in orders you cannot fill—think of the disorganization of your working force, and think of the extra expense of carrying on your business under difficulties! Think of the work your competitors are doing while you cannot work at all. If your **home** is burned—think of the loss of furniture, personal property and treasures which money can never replace, Think of the danger to yourself and to your family. Look more to the **protection** of your property than the reduction of your insurance rates. Last year's fire loss was $382,000,000. One way to reduce it is better individual protection. Four-fifths of all fires in cities are put out by the chemical apparatus of fire departments—but it takes them valuable time to get there.

BADGER'S 40-Gallon Chemical Engine

It will give you your own fire protection—your own efficient fire department—a fire equipment capable of immediate action—more effective than thousands of pails of water.

The Badger 40-Gallon Chemical Engine is built to meet the requirements of the National Board of Fire Underwriters and bears the *inspection label* of the Underwriters' Laboratories. It not only comes up to the Underwriters' standard of efficiency, but is the best built engine of its size on the market. Ask your Insurance Broker and he will verify just what we say.

This is of vital importance and demands your careful consideration when buying fire extinguishers on which depend the saving of your property—the saving of life.

The Badger Chemical Engine gives you a most effective private fire department. It has a narrow tread and will go through any three foot opening. It throws a stream 75 to 85 feet sufficient to extinguish all incipient and many well started fires. It is more effective in extinguishing a blaze than thousands of gallons of water. In fact, it puts out oil and gasoline fires which water would spread, and extinguishes fires which water could not reach—due to the chemical action of the engine in generating a gas which acts as a blanket on the fire. Does not flood premises with water and cause additional loss. Stream can be instantly stopped by shutting off the nozzle. Operated easily by one man. Requires no experience. Costs practically nothing to maintain. All chemicals necessary are sold at any drug store.

FREE Trial Offer

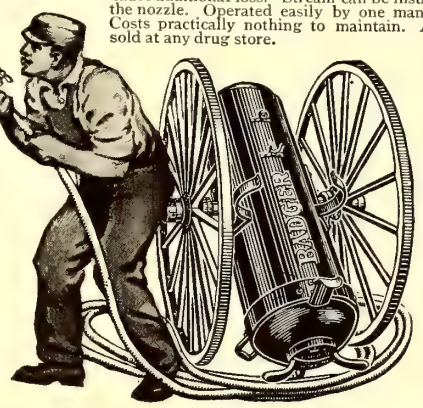
This is our offer. We will ship you an engine, with two chemical charges, freight prepaid, and allow you 30 days' free trial. If it does not meet your requirements, you can return it to us at our expense. This enables you to build test fires as large as you like and satisfy yourself absolutely of its efficiency before you pay for it. Cut off the attached coupon and mail to us, and we will send you descriptive catalog J, price lists and all information on this free trial offer.

Badger Fire Extinguisher Co.
32-J Portland St., Boston, Mass.

Please send me booklet J and all details of your free trial offer.

Name _____

Address _____



STOP THE FIRE WHEN IT STARTS

We Make All Kinds

This Shows our 3-Gallon Extinguisher

BADGER FIRE EXTINGUISHER CO. 32-J Portland St., Boston, Mass.

RATS KILLED BY SCIENCE

By the use of the wonderful bacteriological preparation, discovered and prepared by Dr. Danysz of Pasteur Institute, Paris, science has at last found the only successful method for exterminating rats and mice.

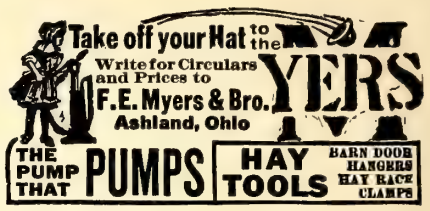
Used with striking success for the past few years in England, Scotland, France, Holland and Russia.

DANYSZ VIRUS

contains the germs of a disease peculiar to rats and mice only, and is absolutely **harmless to birds, human beings and other animals.** The rodents always die in the open, because of feverish condition. The disease is also contagious to them. The Virus is easily prepared and applied.

How much to use: A small house, one tube; ordinary dwelling, three tubes (if rats are numerous, not less than six tubes). One or two dozen for large stable with hay loft and yard. Three to six tubes per acre in case of open fields, game preserves, etc. Price: one tube, 75c.; three tubes, $1.75; one dozen, $6.00 delivered.

INDEPENDENT CHEMICAL COMPANY
Dept. Z, 25 Old Slip New York, N. Y.



My new Twenty Page Catalogue of

ANTIQUES

is the largest and most comprehensive that I have issued. Contains descriptions and prices of hundreds of

Genuine Antiques
Old Furniture (mostly Mahogany)
Rugs **Copper**
Old China **Brass**
Old Glass **Pewter**
Old Blue Quilts **Colonial Lamps**

Many Colored English prints, Court Beauties and others. A fine collection of ANTIQUE JEWELRY, many unique pieces.

All at very moderate prices. This Catalogue sent free on request to anyone interested in Antiques.

MRS. ADA M. ROBERTS
WASHINGTON NEW HAMPSHIRE

To secure the richest and most durable effects in wood-finishing use JOHNSON'S ARTISTIC WOOD FINISHES JOHNSON'S

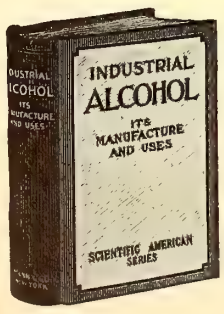
Send for Free Booklet, edition AH-8

S. C. JOHNSON & SON, *"The Wood-Finishing Authorities"*
RACINE, WIS.

516 Pages, 107 Engravings NOW READY *Price, Four Dollars*

Industrial Alcohol

ITS MANUFACTURE AND USES



A Practical Treatise based on Dr. Max Maercker's "Introduction to Distillation" as revised by Drs. Delbrück and Lange

COMPRISING

Raw Materials, Malting, Mashing and Yeast Preparation, Fermentation, Distillation, Rectification and Purification of Alcohol, Alcoholometry, The Value and Significance of a Tax-Free Alcohol, Methods of Denaturing, Its Utilization for Light, Heat and Power Production, A Statistical Review, and the United States Law

By JOHN K. BRACHVOGEL, M.E.

THE value and significance of a tax-free alcohol have been so widely discussed in the press and periodical literature of the entire country, that it is unnecessary to emphasize the great importance of the subject, especially to our agricultural and industrial interests. For years we have been far behind the nations of Europe in this regard, and in consequence our literature has been sadly lacking in authoritative works covering this phase of industrial activity. This book was designed with the especial purpose of filling this want, and it is the latest and most comprehensive work of its kind which has been published in this country.

Few in number are those to whom this book would not prove of interest and value. The farmer, the manufacturer, the power-producer, the householder, will all find that denatured alcohol is of such importance to them, that its use and introduction will effect savings and economies which were hitherto impossible of accomplishment.

FOR SALE AT ALL BOOKSTORES

JUST PUBLISHED

THE SCIENTIFIC AMERICAN BOY

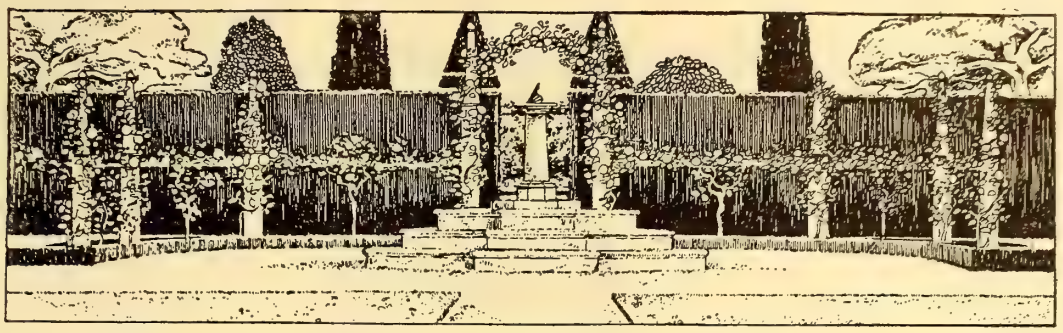
By A. RUSSELL BOND

12mo. 320 Pages. 340 Illustrations
Price, $2.00, Postpaid

A STORY OF OUTDOOR BOY LIFE, suggesting a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. Complete practical instructions are given for building the various articles. The book contains a large number of miscellaneous devices, such as scows, canoes, windmills, water wheels, etc.

MUNN & COMPANY
Publishers of "Scientific American"
361 BROADWAY, NEW YORK CITY

The Garden in Your Town



IS it a success? If so, the Garden Competition Editor of American Homes and Gardens wants to know about it—he will pay $200 in prizes for the five best-planted, developed and successful suburban or village gardens. Write to the Garden Competition Editor and tell him how you planted your garden and what success you had with it; tell him of the plants with which you have had the best results, and also those which have been failures. Send him a good photograph and a plan of the garden. *We want you to help us so that we may help others to beautify their surroundings. You need not be a skilled writer to tell a story of your garden success. Tell it in your own way.*

$200 for Prizes

For the best garden received we will pay:

For the First, - - -	$100.00
For the Second, - -	50.00
For the Third, - -	25.00
For the Fourth, - -	15.00
For the Fifth, - - -	10.00

Conditions

Competitors for the prizes must comply with the following conditions:

1. A general description of the garden, giving the size of the plot and the kind of plants used in planting.
2. Drawings of the plot are to be made, preferably on a scale of eight feet to the inch, showing the positions of the various plants and shrubs.
3. Photographs of the garden are to be sent printed on solio paper and should not be less than 5 x 7 inches in size. If possible to do so, please also send a photograph showing the garden before planting.
4. Descriptions, photographs and drawings are to be marked with a pseudonym, which is to be enclosed in a sealed envelope containing the name and address of the competitor. As soon as the judges have decided upon the five best gardens they will notify the Editor, who will open the envelope bearing the proper pseudonym and containing the competitor's true name. The competitor will be notified by the Editor that he has won the prize.
5. The Garden Competition Editor reserves the right to publish in American Homes and Gardens all gardens which in the opinion of the judges are worthy of honorable mention. The names of those whose gardens are reproduced will be published with the photograph.
6. Contributions are to be submitted to the Garden Competition Editor, American Homes and Gardens, 361 Broadway, New York.
7. The Garden Competition closes September 15, 1909. Contestants need not be subscribers to American Homes and Gardens, and no charge or consideration of any kind is required. *No photographs, manuscripts or plans will be returned.*

BURLINGTON Venetian and Sliding BLINDS

Venetian Blind for inside window and outdoor veranda. Any wood; any finish to match trim.

SCREENS AND SCREEN DOORS

¶ Equal 500 miles northward. Perfect privacy with doors and windows open. Darkness and breezes in sleeping rooms.

Sliding Blinds for inside use. Require no pockets. Any wood; any finish.

WRITE FOR OUR CATALOGUE, PRICE-LIST AND PROPOSITION TO YOU

BURLINGTON VENETIAN BLIND CO., 975 Lake St., Burlington, Vermont

How Much Happiness

will you give to sufferers in dark hot tenements, by sending them to

Sea Breeze

our Fresh Air Home, and the hospital for tuberculous children, where Smiling Joe was cured?

$10 sends 4

for a whole week of sweet cool air, good food, games and invigorating ocean bathing.

"If you lived in our dark basement you would know why we want to go to Sea Breeze."

"It's more fun to be a 'little father' at Sea Breeze than to run with the gang on Ave. A."

HOW MANY MAY WE SEND AS YOUR GUESTS?

$2.50 will give a whole week of new life and cheer to a worn out mother, an aged toiler, an underfed working girl, or a convalescing patient.
5.00 gives a teething baby and its "little mother" of ten a cool healthful week.
10.00 gives four run-down school children a fresh start for next year.
25.00 names a bed for the season. $50.00 names a room.
100.00 gives a happy excursion to 400 mothers and children—for many their only outing.

Can you not have a lawn party or an entertainment for Sea Breeze?

Please send your gift to R. S. MINTURN, Treasurer, Room 24, No. 105 E. 22nd St., New York

N. Y. ASSOCIATION for IMPROVING the CONDITION of the POOR
R. FULTON CUTTING, President

"My little girl had measles and then pneumonia. The doctor says two weeks at Sea Breeze might have saved her."

To how many other such children will you help us give a fighting chance before it is too late? $5.00 will do it for one.

"It's easy to get well at Sea Breeze. It kept me from losing a whole year at school."

Bungalows and American Homes

Design No. 2, Built in California and Iowa—Cost $2,200

Our handsome 100 page, 8x11 book of Bungalows, Mission, Colonial, English timbered and concrete houses for 1909 shows interiors, exteriors, and floor plans and actual cost to build. **Figures that you can rely upon.** These designs are photos of structures **we have built** in California and throughout the country—not theoretical pen pictures. Bungalows rent and sell at sight, and are an excellent investment. Price of book $1.00, P. O. or express order, prepaid. Sample folder free.

Brown Bros., Architects, 918 Security Bank Bldg., Cedar Rapids, Iowa

"Willowcraft"

is the only durable line of **WILLOW FURNITURE** made in the United States. We are the manufacturers, and will send this sample chair for $7, fgt. prepaid, anywhere east of the Mississippi River, Write for our catalogue of 150 other patterns.

The Willowcraft Shops

Box A NORTH CAMBRIDGE, MASS.

FARR'S IRISES and POPPIES for August Planting

Most complete collection of these—also Peonies—offered in America. Plant in August for best results. You can get of me hundreds of choice kinds offered by no other American grower. All plants absolutely true to name. Send for my catalogue at once—it's unique.

BERTRAND H. FARR - 809 E Penn Street, Reading, Pa.
WYOMISSING NURSERIES

Van Dorn Iron Works Co.

PRISON, HOUSE & STABLE WORK

JOIST HANGERS
LAWN FURNITURE
FENCING, ETC.

CLEVELAND, OHIO

PREVENTS DRAFTS, DUST AND WINDOW RATTLING.

PATENTED.

IVES' PATENT Window Stop Adjuster.

The only Stop Adjuster made from one piece of metal with solid ribs and heavy bed that will not cup, turn or bend in tightening the screw. Manufactured only by **The H. B. IVES CO., New Haven, Conn., U. S. A.** (Fifty-page Catalogue Mailed Free.)

The Scientific American Boy

By A. RUSSELL BOND. 320 pages, 340 illus. $2.00 postpaid

A STORY OF OUTDOOR BOY LIFE

Suggests a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit Complete practical instructions are given for building the various articles, such as scows, canoes, windmills, water wheels, etc.

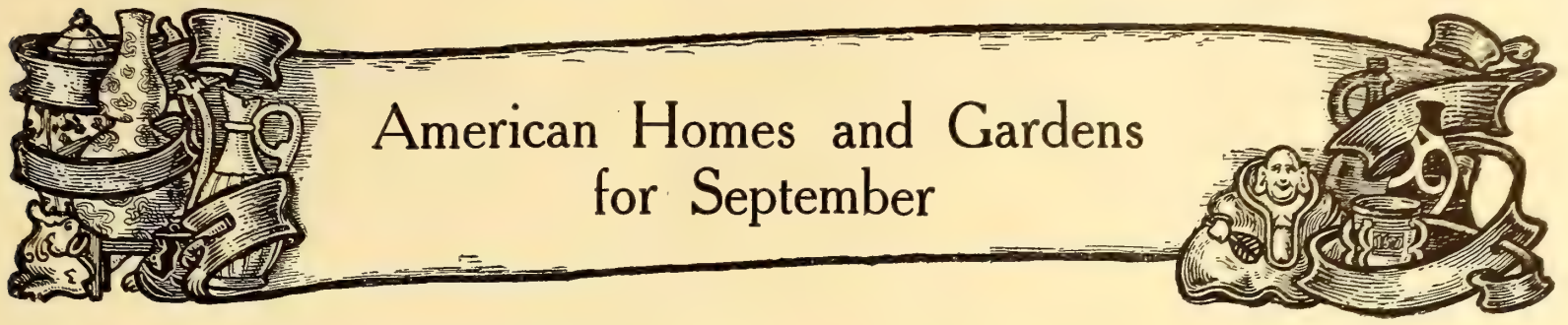
MUNN & CO., Publishers, 361 Broadway, NEW YORK

BOOKS

RELATING TO
Architecture
Decoration
Furniture Rugs
Ceramics, etc.

will be recommended and supplied by our well equipped Book Department.

MUNN & CO.
361 Broadway
NEW YORK



American Homes and Gardens for September

A Summer Cottage at Elberon, New Jersey

The September number opens with a readable description, by Barr Ferree, of the interesting summer cottage erected by Daniel Guggenheim at Elberon, N. J. This spacious and elegant seaside villa is one of the more recent works of Carrère & Hastings, the well-known architects of New York. The house is elaborately illustrated within and without, and exhibits many points of interest.

Swimming Pools for Private Gardens

A timely subject of special interest to owners of large country estates is this notable paper on Private Swimming Pools. The illustrations include some picturesque reproductions of pools in famous gardens, and, in addition, detail drawings of a significant design not heretofore published.

Vacation Home Making

A helpful paper by Edith Haviland, full of practical suggestions and timely ideas. The writer knows her subject well and brings forward many attractive features that help to make the vacation home pleasant and agreeable. The article is abundantly illustrated, and is one of the most notable features of the number.

Garden Trellises

C. C. Grant, a successful designer of garden trellises, contributes a suggestive paper on this topic. He tells how trellises can best be made, how and where they are suitable for use, and what are the best vines to grow against them. The article condenses a copious experience, and is illustrated with many handsome photographs of trellises and gardens.

The House of Guaranteed Cost

The house with a guaranteed cost—designs, plans and elevations of a house expressly designed for AMERICAN HOMES AND GARDENS, and guaranteed by a reputable builder to be erected within sixty miles of New York for a set sum—is, this month, from the office of Walker & Hazzard, architects. It is an interesting design, sure to excite comment and win friends.

Two Pages of California Bungalows

Two full pages are devoted to reproductions of photographs of bungalows built at Pasadena, Cal. There is a charming variety of low-cost houses in the collection, which is bound to attract wide attention. The addition of the cost price to each picture enables the readers to accurately gauge the value of each illustration to himself.

Photographing Birds

B. S. Bowdish contributes a fascinating chapter on one of the most delightful of outdoor sports, a sport full of real and living interest and yet which tends to preserve animal life. His paper abounds in interesting adventure, and is illustrated with many novel photographs showing exactly how he has photographed birds in his own extended experience.

Concrete Garden Ornaments

Ralph C. Davison begins a short series of practical articles on Concrete Garden Ornaments in this article. He tells how to make an ornamental garden vase of concrete, illustrating his description with the necessary detail drawings, and telling in plain simple words how the work may be done. This group of articles opens up a new line of interested activity to the worker in the garden.

L'Art Nouveau Houses in Austria

Readers of AMERICAN HOMES AND GARDENS who are unfamiliar with the latest development of l'art nouveau in Europe will find this article by Ralph de Martin of singular interest. Here is a wholly new form of architecture, highly developed, and used in domestic and ornamental structures. Mr. de Martin writes entertainingly of this remarkable phase of contemporary foreign art, and supplements his criticisms with many striking photographs.

Do Plants Think?

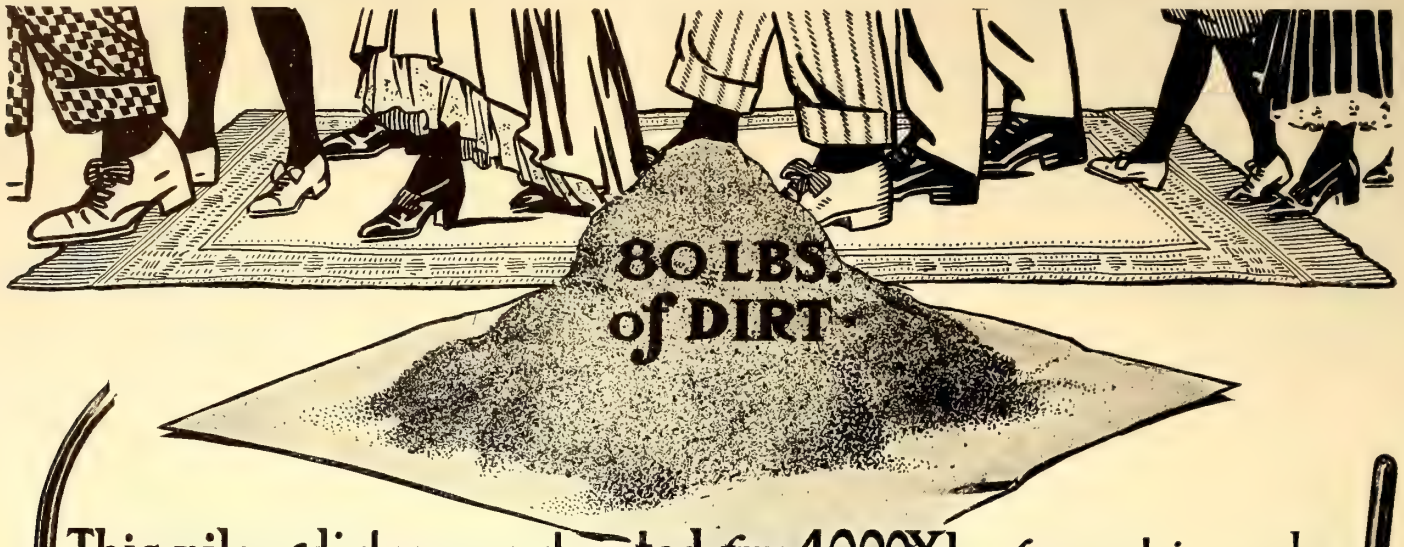
A lively query made by Percy Collins, who contributes a thoughtful paper on this fascinating topic. Mr. Collins has something to say, and he says it directly and without hesitation. The photographic illustrations bear out the trend of his argument in a striking manner.

A House in Massachusetts

The fine residence of George Smith, at Philip Beach, Mass., is described and illustrated in a thoroughly adequate manner. It is a house of brick, developed in a very individual manner, and is most copiously illustrated within and without.

The Departments

As in previous months, the leading departments of AMERICAN HOMES AND GARDENS will be found of timely and special interest. The editorial staff here speak directly to the reader, and many a special personal problem is helped and solved in these columns.



This pile *of* dirt was extracted *from* 4000 Yds *of* carpet *in* one day

How dust collects *from* daily Tread

In one day the "Invincible" removed this 80 pounds of dirt from the New York Hippodrome. The "Invincible" cleans the Hippodrome every day because the "Invincible" has proven itself the most economical and sanitary method of cleaning. We are ready to prove this *to you* any time — any place — you choose.

Clean Your House With Air

Simply attach the "Invincible" to your electric current—and then

—no more clouds of dust—smarting, choking, germ-laden dust! No more beating, sweeping, dusting! These old-fashioned methods are wasteful, unhealthful, inefficient and expensive.

Dust breeds, feeds and carries disease germs. The broom scatters dust; fills the air you breath with dust; never conquers dust. The broom grinds dust into your carpets, and tears the fibre of your most costly furnishings. The broom is the most expensive article in your house. Some day your home will be cleaned by the

"Invincible" Electric Renovator

It Eats Dirt

Cleans everything without the need of removing anything. Portable. Anyone can operate it.

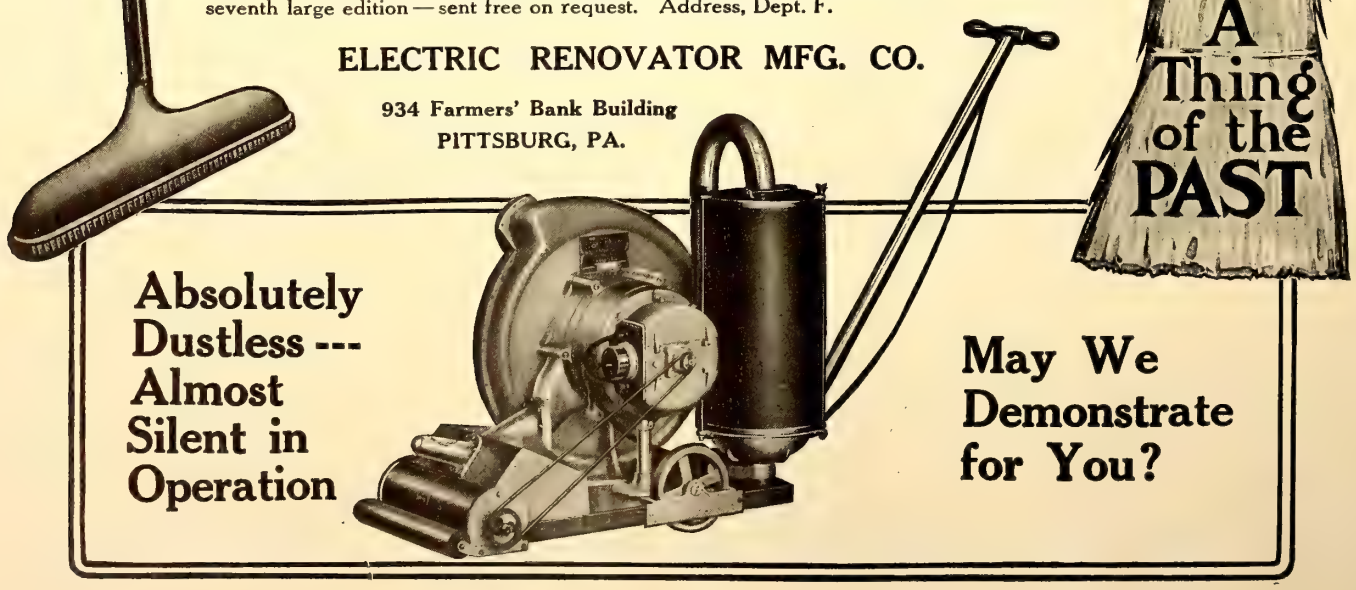
This machine is neither an experiment nor a toy. It has proven itself by years of perfect service in hundreds of residences, office buildings, hotels, etc. It is of the very highest construction known to mechanics and will last a life-time. It cleans by suction, but its principle is entirely different and infinitely superior to all other cleaning devices. You will never know all about modern sanitary cleaning until you know the **"Invincible."**

Send for Free Booklets

—the most complete and valuable booklets on cleaning ever published—now in their seventh large edition—sent free on request. Address, Dept. F.

ELECTRIC RENOVATOR MFG. CO.

934 Farmers' Bank Building
PITTSBURG, PA.



A Thing of the PAST

Absolutely Dustless --- Almost Silent in Operation

May We Demonstrate for You?

AMERICAN HOMES AND GARDENS

Price, 25 Cents. $3.00 a Year

CONTENTS FOR AUGUST, 1909

PAGE

"DARLINGTON": the Inglenook of the Great Hall 294
MONTHLY COMMENT—The Repose of Country Life 296
NOTABLE AMERICAN HOMES—"Darlington," the Estate of George Crocker, Esq., Ramsey, New Jersey ..... *By Barr Ferree* 297
DESIGNS DIRECT FROM NATURE ..... *By S. Leonard Monica Bastin* 304
"ANNESDEN," the Summer Home of Miss Annie E. Quimby, Bridgehampton, Long Island. *By Paul Thurston* 307
PLAYHOUSES FOR CHILDREN ..... *By Mary H. Northend* 310
A GROUP OF SMALL HOUSES—Costing from $3,000 to $10,000. *By Francis Durando Nichols* 313
GRAPE CULTURE IN FRANCE ..... *By Jacques Boyer* 317
A HOUSE WITH A GUARANTEED COST—A House That Can Be Built for Seven Thousand Dollars 321
THE "WAYSIDE INN" ..... *By Esther Singleton* 322
THE ROCHESTER CHEAP COTTAGE COMPETITION—The First and Second Prize Designs. *By Sarah Tompkins Smith* 327
HOUSE OF JAMES E. WHEELER, EDGEHILL ROAD, NEW HAVEN, CONNECTICUT. *By Charles Chauncey* 330
GARDEN NOTES xiii
CORRESPONDENCE:
PROBLEMS IN HOME FURNISHING ..... *By Alice M. Kellogg* xiv
GARDEN WORK ABOUT THE HOME ..... *By Charles Downing Lay* xiv

Making a Country Home: VI. The Evolution of the American Country House.
Home-Made Tools for the Amateur Gardener: The Work Table.
A Pretty Kitchen Garden.
New Books.

Combined Rate for "American Homes and Gardens" and "Scientific American," $5.00 per year
Rate of Subscription of "American Homes and Gardens" to foreign countries, $4.00 a year
Rate of Subscription of "American Homes and Gardens" to Canada, $3.50 a year

Published Monthly by Munn & Company, Office of the "Scientific American," 361 Broadway, New York

CHARLES ALLEN MUNN, President
361 Broadway, New York

FREDERICK CONVERSE BEACH, Secretary and Treasurer
361 Broadway, New York

[Copyright, 1909, by Munn & Company. Registered in U. S. Patent Office. Entered as second-class matter, June 15, 1905, at the Post Office at New York, N. Y., under the Act of Congress of March 3, 1879.]

NOTICE TO CONTRIBUTORS—The Editor will be pleased to have contributions submitted, especially when illustrated by good photographs; but he cannot hold himself responsible for manuscripts and photographs. Stamps should in all cases be inclosed for postage if the writers desire the return of their copy.

"Darlington": the inglenook of the great hall, with entrance archway

AMERICAN HOMES AND GARDENS

Volume VI August, 1909 Number 8

"Darlington": the mansion is built on the summit of a ridge and overlooks the country for many miles around

Monthly Comment

The Repose of Country Life

A NEW poet has arisen in the world. He has favored one of the New York daily papers with a little prose essay in which words are arranged in the most poetic fashion, so that the very dullest of readers must sit up and take notice. The soulful aspect of country life has seldom been presented with more exalted feeling. It is so choice a bit of pure literature that we reproduce it entire:

"When man becomes weary of city life; when man is satiated with its glare and glitter, with its heartless artificiality, its sleepless energy, and its survival of the fittest; when man becomes weary of it all, he should withdraw for a while from its lights and shadows, and, amidst the peace and purity of country life, renew his health and his happiness.

"Amidst the silence and serenity of Nature, surrounded by the majesty of the mountains and the verdancy of the valleys, beneath the azure sky and the drifting cloud, where the bird and the brook and the breeze sing together and the forest and the field speak through the leaf and the flower; where the village lies scattered over the half-hidden valley, and the village church spire invokes its humble blessing; where the sun cheers the day, and the moon silvers the night, and the stars twinkle in a clear, unsullied firmament—such is Nature; such is the call of the wild; such is country life to which man should return when he becomes weary of the glare, glitter and artificiality of the modern metropolis."

Delicious! Is it not splendid and inspiring? In this gentle rhetoric the true soul of the poet is unveiled for the enlightenment, if need be, of quite common men and women. Real-estate owners, the purveyors of abandoned farms, the lessors of land everywhere, should immediately engage the services of this delightful author who, by the mere exercise of his imagination, could readily out-sell any half dozen of the "best sellers" of the fictional press. Surely Nature herself has rarely produced a more ornate flower than this one we have plucked for the adornment of this page.

Would that this exquisite picture were true! Would that but half of it were solid fact! Would that a quarter of it bore even a partial resemblance to actuality! But, alas, one can not seek the haven of the country without being in it and of it, and while no truer words than that "the moon silvers the night" were ever uttered—and all the rest, so far as our poet leads us—none of these things has aught to do with bodily conditions, with the battle of existence, with the difficulties with help, with the conflicts with Nature in raising crops or obtaining food, of making the land pay, or of even yielding the rent, with questions of taxation, with the idiosyncrasies of one's neighbors, or with the vagaries of the local powers of government. This is, of course, bringing the poet down to hard life with a vengeance, yet agreeable as the products of the imagination may be, it is with the realities of things that life is chiefly concerned, and of no form of life is this truer than of country life.

The novice who seeks repose in country life enters upon an experience that may be both strange and weird, an experience that is bound to test his patience and which is very likely to subject him to many unnecessary trials and embitterments. The adventurer setting forth to conquer wild game in a distant continent deliberately seeks a life that offers every contrast to that to which he is accustomed. He goes into a strange world entirely aware of what he is doing and of what may happen to him while he is there. If he has been properly equipped, if he has familiarized himself with such details of this new wild life as may be available in civilized sources, the very things he thought would happen will happen. He will have his adventure, and perhaps plenty of it; he will live in the wild and be so very close to Nature that he can not separate himself from it unless he return to civilization and put a complete end to this enjoyable proximity.

But the mere homeseeker in the country is very apt to have his delusions knocked out of him at so rapid a rate that he will have no energy to return to town, even if he has means to do so. Country life to the city-bred is a wholly new life. The most careful study of the problem, and the utmost of preliminary investigation, the most ambitious desire to succeed, where success means comfort and quiet and peace will prove of little avail against the stern realities and solidities of country life. The most innocent things take on a new and horrifying reality, for Nature is never silent, and the hordes of cutworms and insects out in one's own garden deprive the serenity of much of its reposefulness. The verdancy of the valleys is no longer joyful when the horrid lawn-mower stares one in the face, or its wheels positively refuse to go round. The drifting clouds are a bit tiresome when the roof is being repaired and all outdoor work must be postponed for the downpours of rain with which this natural phenomenon is accompanied. Nor does the scattering of the village exactly appeal to one, when one's own house is a mile from the railroad station, and one must battle home through the rain, or wade knee high in drifts of snow, while the impossibility of getting any household necessity without going a long distance for it—perhaps afoot—brings back a longing for a crowded trolley-car that is admittedly out of place in the concert of the bird, the brook and the breeze.

It is sad to think that all this is true, but not nearly so sad as the sad truth itself. Rather by far the ecstasy of our poet, this dream-country of his extravaganza, this picture-world that can not be! Rather by far the dream than the reality everywhere. For have not the dreamers made the world? Do not our poets and our artists survive in memory and in work far beyond the fame of kings and men? And so the dream-world has its value, has its lessons and its use; but the home-maker in the country-side may well maintain that, after all, the realities of life have a practical every-day utility beside which the most sublime outpourings of the imagination have small relationship.

Repose there is in the country, and plenty of it. And it is very beautiful and very abundant. But its enjoyment is only to be obtained at the price of hard work. One can not live successfully in the country without overcoming many difficulties. Some of these are personal, some exist in the land, some are due to the older inhabitants, some are due to the policy or lack of policy with which the district is governed. The human element is apt to carry as much weight in annoyances as the land question, and matters wholly outside of one's control may be as active in promoting discontent and unhappiness as those that one may personally direct and change. And if, from out this turmoil, one may snatch a few moments with the majesty of the mountains and the other peaceful aspects of the country, one may rest assured that one has won as much repose from Nature as the modern country life as practised and exemplified in the American suburbs can offer.

The terrace front

Notable American Homes

By Barr Ferree

"Darlington," the Estate of George Crocker, Esq., Ramsey, New Jersey

THE doors of Darlington swing open to an interior that is at once sumptuous and grandiose. The entrance-hall is a stately apartment paneled in oak, with a geometrical ceiling of the same beautiful wood. The larger part of two sides is occupied with the staircase, a monumental structure of rich beauty, with a carved balustrade of oak, with enriched newels and piers, some of which support statuettes. Two doorways have been put in the right wall; one of these admits to the electric elevator by which the upper floors may be reached; the other opens into a coat room. To the left, and entered beneath the stairway, is the office. This is by no means a minor apartment, for its walls are encased with a high paneling of English oak, with a broad stretch of white plaster above. The beams of the ceiling are exposed and are supported on ornamental corbels. A superb panel of Japanese embroidery almost completely covers one end of the room.

Directly in face, as one enters the entrance-hall, is a lofty arch; through it the eye is at once attracted to the great room beyond, and to the inglenook and fireplace with which the vista is closed. The arch does not, in fact, open immediately into the great hall, although it appears to do so, but into a corridor that is extended on the right and left to the farthest limits of the mansion. This passage is completely walled on the side by which it is entered, but on the inner side, where it adjoins the great hall, it is open. Here it has the effect of a cloister walk, with open arches to the great hall, and a groined vaulted ceiling. Beyond the hall it has the true function of a corridor, but seen from the hall itself it is an integral part of this great apartment, whose dimensions are not only extended by its area, but whose beauty is greatly increased by this stately architectural treatment.

The magnificent great hall is not only an exceedingly splendid room, but an apartment of the deepest interest. It seems scarcely necessary to add that it is the most important room in the house, for that is obvious by its size and situation. But it is interesting not only because of its splendid architectural design, but for what it contains. The whole arrangement is exceedingly fine. There is a strong character connection between the entrance-hall, with its somewhat subdued treatment, and the more enriched splendors of this great room. It is superb in size, so large, indeed, that there is no dwarfing of the floor space by the large pieces of furniture with which it is supplied, as sometimes happens when the dimensions are less generous. Its structural features are likewise in thorough keeping with its monumental character. It is two stories in height, the walls on three sides being lined with Caen stone, while on the fourth, or entrance side, is a two-story gallery in English oak, carved in the richest manner and a decorative feature as rare as it is effective.

The lower walls to the springing of the arches in the entrance arcade, both within the hall and in the outer corridor, are lined with oak paneling. The Caen stone is exposed

The dining-room is paneled and ceiled with California redwood

The terrace and woods beyond the entrance front

above this, and on each side are three great open windows that give upon the upper corridor; rich tapestries and banners hang over their carved balustrade. Directly in the center of the longer side is the inglenook. The wainscoting here is more elaborate than elsewhere, and has somewhat the character of a gigantic mantel and fireplace. The opening, however, admits to a recess that is projected beyond the main wall line, and is a real inglenook, with fireplace and mantel, little windows on either side and side seats. The overmantel displays a paneled design in Caen stone inlaid with colored marbles, and the andirons are superb pieces of chased bronze.

Such, in very bald description, are the architectural characteristics of this splendid room. They alone would excite interest and arouse attention, but the contents of the room add enormously to its attractiveness. Rare tapestries are hung against unoccupied spaces of hall; rich embroideries are flung over the upper balustrades; and, above all, are the rare and beautiful collection of art works with which the room is thronged, its cabinets crowded, its walls and pedestals embellished and beautified. Mr. Crocker is the fortunate possessor of an exceedingly rare and beautiful collection of Japanese and Chinese porcelains, and many of his choicest

The library ceiling was painted by James Wall Finn

There is an immense triple window on either side of this center-piece. They open upon a terrace paved with red brick. On either end, against the projected wings of the main building, are loggias in Indiana limestone. There is a handsome balustrade enclosing the terrace, on which stand a row of orange trees in ample boxes and tubs. Grassed and floral terraces descend to lower levels, and beyond is a view of entrancing loveliness.

The ceiling of the hall is directly articulated with the great carved screen of the entrance side, its beams resting on carved corbels, which are a part of its decorative features. Like the screen, the beams are of English oak and, like it, they are enriched with carving. Carved pendants hang from the chief points of intersection. The panels are decorated plaster, and at each end hangs a massive silver chandelier.

specimens are used for the embellishment of this chief room of his house. The room has not, indeed, anything of the character of a museum, yet it contains many a superb piece that many a museum might envy and be the richer for possessing. One could, in truth, spend days in examining the treasures of this American palace, only to leave it with a sense of beauties unappreciated and of studies incompleted. One other single feature of the hall should be mentioned, and that is the large pipe organ that occupies much of the end.

Although the great hall is, in a very true sense, the center of the house, the other chief rooms on this floor are quite commensurate with it in magnificence of appointments. In a general way the plan of the house is H-shaped; in the center is the great hall, flanked with a wing on each end. In the

The magnificent great hall is paneled with English oak and has walls of Caen stone; the entrar

wall is treated as an oak-carved gallery in two stories; the room contains many notable works of art

The magnificent great hall is paneled with English oak and has walls of Caen stone; the entrance wall is treated as an oak-carved gallery in two stories; the room contains many notable works of art

right wing is the dining-room and breakfast-room; in the left, the library and drawing-room.

The library has a low wood wainscot, with upper walls finished in plain gilt, thus presenting an effective background for the magnificent collection of paintings with which the room is hung. The mantel and chimney-breast are of Caen stone, designed with an elaborately carved upper panel. The fireplace lining is of red brick and the andirons are gilded bronze. All the beams and rafters of the ceiling are exposed, the latter being very closely set, and all have been decorated with small paintings by James Wall Finn, in the style of the Italian Renaissance. The work has been marvelously well done, since it has all the character of an antique ceiling. The window curtains are of red velvet with gilt trimmings, but the color of the room is actually determined by the furniture, the coverings of which are of deep blue velvet or blue and gold. The lamp shades, of deep red, give also a distinctive note to the room. The rug has a black ground, with figures of red, green and tones of yellow.

Directly opposite is the drawing-room. Its walls are completely lined with velvet brocade in white and gold, and are unrelieved with architectural features save for the monumental frame of carved wood, painted white, of the entrance-door, and the mantel of carved white marble that faces it at the other side of the room. The window curtains are of the same material, and the furniture is of the English type, lined with red and white velvet, with gilded frames. The ceiling is finished in white plaster, richly decorated and in high relief. Some fine old gilded mirrors are hung against the entrance wall, and on one side is a superb piece of old French tapestry. The rug is very soft in color, and forms a beautiful foundation for the rich furnishings. The walls have a low wainscot of wood, painted white, and relieved with a small band of hand-carving.

Both these rooms are reached by an extension of the corridor that forms so fine a feature of the great hall. Set within its wainscoted walls are glazed cases containing some of the rarest and most beautiful of Mr. Crocker's porcelains. The cases are lighted by electricity from within, and when so illuminated the wonderful beauty of their contents is seen at its best. Other porcelains and bronzes stand above the cases and help to convert this passage into a veritable shrine of Oriental art.

The breakfast-room has a richly decorated plaster ceiling and is hung with superb tapestries

The dining-room is at the farthest end of the house and is finished throughout in California redwood. It is, in a sense, a memorial to Mr. Crocker's early home, since the entire surfacing of the room is of California origin. The walls are designed in great panels, separated by pilasters, heavily enriched with carving. At one end is the fireplace. Here the pilasters make way for Corinthian columns; on each side is a monumentally framed door, and in the center the fireplace encased in polished black marble, while above it is a portrait of Charles Crocker, Mr. Crocker's father. The ceiling is extremely beautiful, with a great central oval of irregular

form, very heavily carved, while without the surface is carved in low relief. Like the walls, the ceiling is, throughout, of California redwood, but the plain rich wood alone is used for the center. The furniture is of English walnut with tapestry seats. On either side is a carved gilded sideboard with top of polished green marble.

The breakfast-room, in the opposite end of this wing, is articulated with the dining-room by a spacious butler's pantry, within which is a stairway to the kitchen and service rooms below. Its size is practically identical with that of the dining-room. It has a low wood wainscot, above which the walls are covered with a figured pattern in low relief and cream and yellow in tone. The geometric ceiling is of plaster, and is very rich in design, with numerous hanging pendants. The window curtains are of red velvet. The chief decoration of the room, however, is obtained from the magnificent tapestries which hang on the center of each wall, and which are among the most valuable of Mr. Crocker's large collection. The room is entered from one corner, the doorway, within, being enclosed within a triangular screen of English oak that gives a quaint aspect to the apartment, while harmonizing completely with its general style and treatment.

The interior of this great house possesses so much interest that the larger part of space has been necessarily given to it. Yet outwardly it is exceedingly fine and impressive. The design of Mr. James Brite, architect, of New York, the mansion stands on the summit of a ridge that rises somewhat steeply as it is approached from the railroad station, but which affords ample room for spacious terraces and gardens on the inner side, where the entrance front is located. The lofty walls of Harvard brick rise high above the whole of the surrounding landscape, the house being three full stories in height, with a fourth story in the roof that is partly concealed behind the pierced balustrade with which the whole is crowned. The general form of the plan has already been stated, but the pergolas and pavilions without the house which face the terrace front, and in which its total area is greatly extended, should be mentioned. The treatment of the terrace front is, indeed, entirely monumental, the great grassed terraces being reached with long flights of stone steps, while the retaining wall that supports the upper terrace is covered with ampelopsis, roses and clematis. On the entrance front, the lower terraces are in process of transformation at this writing; but an ample esplanade here is enclosed within a balustrade, while a great bed of rhododendrons and lilies give a wonderful color-note to the center. The entrance doorway itself is encased within an ornamental facing of Indiana limestone that is the most ornate feature of the exterior.

That the lower terraces here are in process of transformation by no means suggests unfinished grounds. The estate is a large one, including eleven hundred acres, and various works are naturally undertaken from time to time. The grounds immediately around the house are in perfect order and entirely complete. Rare old boxes have been successfully transplanted to without the entrance door. Farther on a splendid grove of Japanese maples, a truly remarkable collection, has been permanently rooted. In the nearby woods, to the left of the entrance, whole forests of rhododendrons have been set out, and in their season cover the hillsides with carpets of the loveliest blooms. Off on the right are the conservatories and greenhouses, truly mammoth structures, devoted to all sorts of practical and beautiful uses. The house lawns are in perfect condition, and the planting everywhere, whether it be of evergreen, of shrubbery or perennials, is beautiful and decorative. One may literally tramp miles through this estate and see some new object of interest almost at every step. It is, in a very true sense, a notable home, one worthy to be loved and admired.

The service entrance and one wing of "Darlington"

A pattern of fern fronds

Designs Direct from Nature

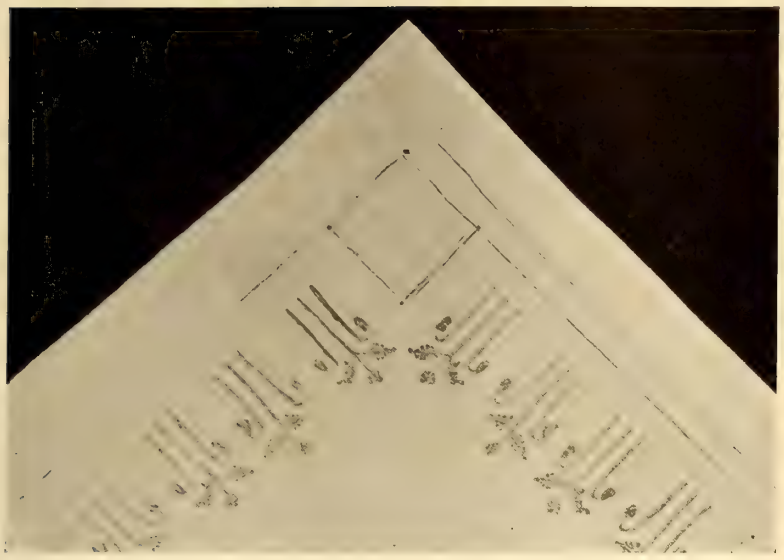
By S. Leonard Monica Bastin

IT IS not a little remarkable in these times to observe the widespread desire to return to a more natural ordering of things. The modern worldling, surrounded by all the artificial influence of an amazing civilization, finds that, after all, it is invariably delightful to heed the call of Nature. While it would be foolish to maintain that the great mother is entirely perfect in all her ways, yet there is no doubt that the patient observer may reap a rich reward from his study of natural objects. Thus, while we may not say that Nature is always artistic, we must admit that on occasion she may be a very good artist indeed. As a matter of fact, we know that underlying all the apparent muddle of the living world there exists a marvelously rigid code of rules; the very position of the leaf on the twig being a circumstance which is adjusted with a mathematical precision. On the other hand, there are so many happenings which may affect the unit that a certain elasticity in the application of the rules is necessary. Nature holds the fulfilment of the artistic code as of secondary importance when the well-being of the individual is threatened; so that while the perfect plant may be truly artistic, the average specimen is not by any means so. It is, perhaps, on this account that it is only within very recent times that the idea of direct nature patterns from the plant world has been regarded as at all possible.

In the new school of direct nature designers there is one great underlying principle. Apart from the necessary adjustments, the aim and object should be to preserve the original pattern. Of course, almost since men first learned to draw they have been in the habit of taking some natural object and adapting the form for ornamental purposes. The spirit in which the nature designer takes up the work must be entirely different. He must remember that he is not in any sense the artist of the pattern, and it is his place simply to reproduce the pattern, just as it has been conceived, as faithfully as in him lies. Certainly no one can expect to find the more finished plant patterns without a patient search. So many things prevent the plant from developing on straightforward lines—overcrowding, a shortage of moisture, difficulty in getting sufficient light, each and all of these may upset the normal growth of the plant. Indeed, it is really only when a specimen is in an isolated situation that it will evidence that fine balance of bearing which is so essential for the forming of a good pattern. Still, a ramble over the country-side is almost sure to be productive of a certain percentage of examples, which provide some excellent types of nature designs. As a general rule, too, the best patterns are to be found among the very humble plants.

Some of the commonest wayside weeds present really attractive formations, the most striking of these being the numerous star-like designs which abound in the smaller composite species. These little plants have a curious habit of sending out their leaves close to the ground, and, as the

Nature's own design for a wall-paper frieze



The fern frond applied to a table-cloth

foliage is produced with great precision, a very regular effect is the result. Again, the young fronds of some of the common ferns provide the wherewithal for the making of the most charming designs. A glance at one or two of the accompanying photographs will show the truly artistic nature of these patterns, and the instances shown are only a few out of an almost endless range of subjects which would be possible. Curiously enough, it is found that among nearly all kinds of succulent plants there exists a strong tendency to develop in a strikingly designed pattern. What could be more neat than the proper little rosette of the Sempervivum; each one of the small leaves seems to fit exactly into its place and to be indispensable to the success of the pattern. This rigidity of design is to be seen to a greater extent among the Cacti than anywhere else. Some of these plants might very well be patterned on the most exact geometrical principles, and by their appearance suggest that they have been cast in a mold.

There is no doubt that the best idea of the value of any nature design is to be obtained by arranging the plants on a black velvet background. The material seems to throw up the outline to an extent which is not observed when a white or neutral setting is used. It is a very simple matter to fasten a piece of the velvet on to a flat board, nailing it down so that the substance is pulled tight and there are no wrinkles. It is most important that the pattern-making specimens should be quite fresh, and in order to keep them in this condition it is a good plan to place them as they are collected into a tin. Herein they will keep fresh and firm for a long while. Of course, no unnecessary delay in transferring the design is permissible when once the specimens have been gathered, as even with the utmost care plants will all too soon become shriveled, when they are useless for the purpose.

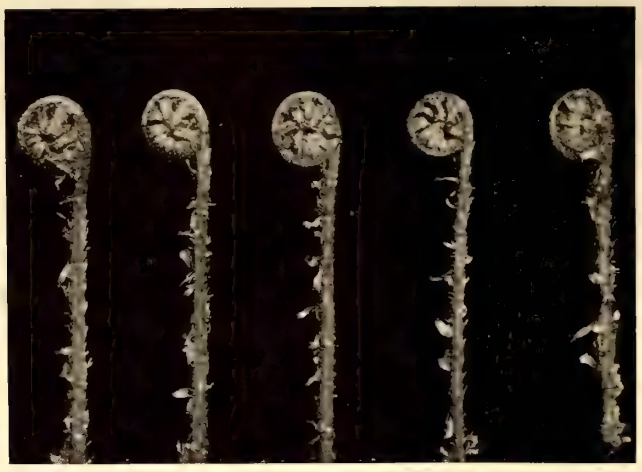
Symmetry in fern fronds

Probably the surest mode of securing the nature pattern is by means of photography. The plants or parts of plants having been arranged on the velvet background, are simply placed in front of a camera and the resulting print is used as the design. Of course, the exact process depends somewhat upon the article to be ornamented, but the transference of the pattern will be accomplished by means of tracing and carbon papers. By resorting to photography there is no doubt that the most faithful reproduction of the design is obtained, but, on the other hand, the work might very well be drawn out. Any one who was a sufficiently good draughtman to copy the nature pattern might easily dispense with the camera. It may be well, again, to insist on the fact that in order to keep the spirit of the new art we must try to reproduce the original form as nearly as is possible. The artist will almost certainly feel a great desire "to improve upon Nature," and in doing so will, of course, destroy the whole point of the undertaking. Special care should be taken to ensure that strength of outline which adds so much to the realism of the pattern; this will be found to be of a good deal more importance than the details of the interior. With the novice it is strongly to be advised that the worker should spend a short while in examining the parts of the plant before any attempt is made to reproduce the design in

Arranging nature designs

Transferring the pattern to the linen

Dandelion

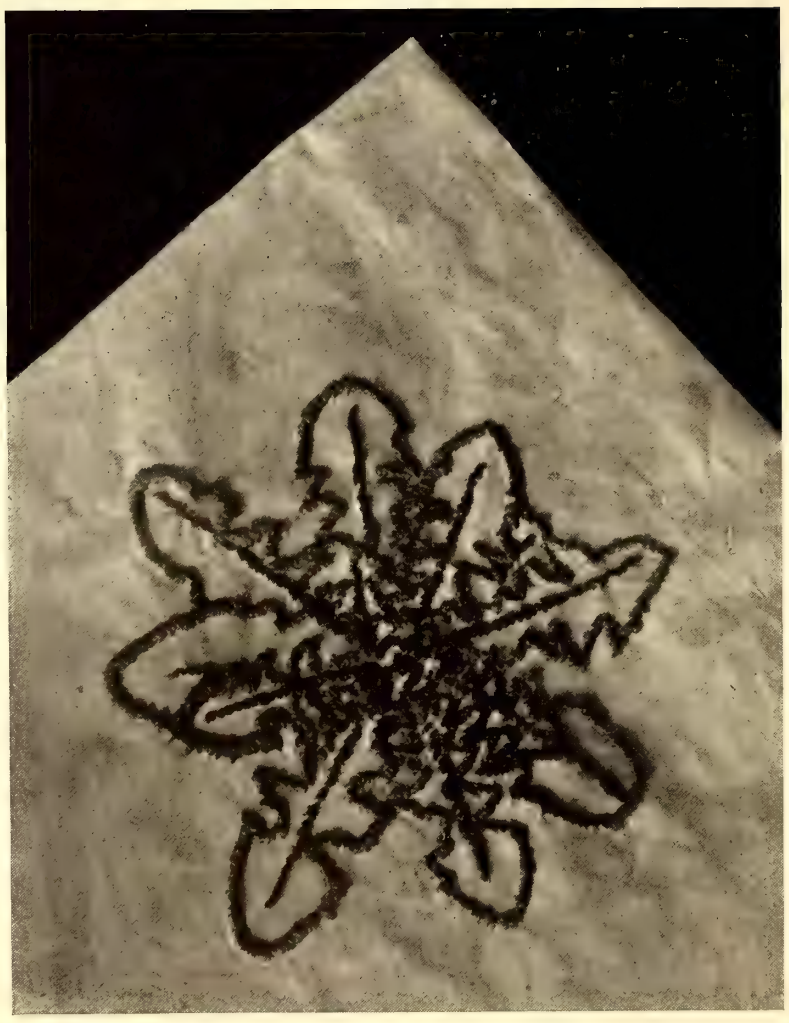


Fern frond pattern

Euphorbia

actual work. Of course, the final effect will depend, to a large extent, upon the suitability of the design to the particular purpose for which it is employed. This is a matter which should receive a good deal of attention in order to avoid incongruity in the application of the design. Indeed, there are few handicrafts in which it is possible to exercise so much originality as in the matter of nature designing.

Within the limits of the present article it is only possible briefly to indicate the purposes which the nature patterns may be made to serve. In all branches of artistic handicraft the direct nature designs are very successfully used. Possibly they are more adapted to articles of needlework than anything else. The great variety of silks and shadings which are at one's disposal give plenty of scope for reproducing the copy to the best possible advantage, whereas in doing poker work or wood-carving it is, perhaps, more difficult to follow the finer details of the design. Nevertheless, some very striking work may be done in these directions. In needlework, however, a wide range of effects can be obtained by the help of a number of different stitches, and the accomplished needlewoman will soon be able to decide exactly the way of working which will most faithfully give the impression of the nature design that is being carried out.



Common weed as an embroidery pattern

It is certainly less easy to copy directly living plants and leaves than to work from an ordinary drawn-out pattern. One reason for this is that more detail must be given, and yet it has to be inserted in such a way that it will be quite lost in the finished effect when the design is completed, and the whole process ended.

Rosette of houseleek

Cactus pattern

Star pattern from weed

A long rambling house overlooking the sea

"Annesden," the Summer Home of Miss Annie E. Quimby

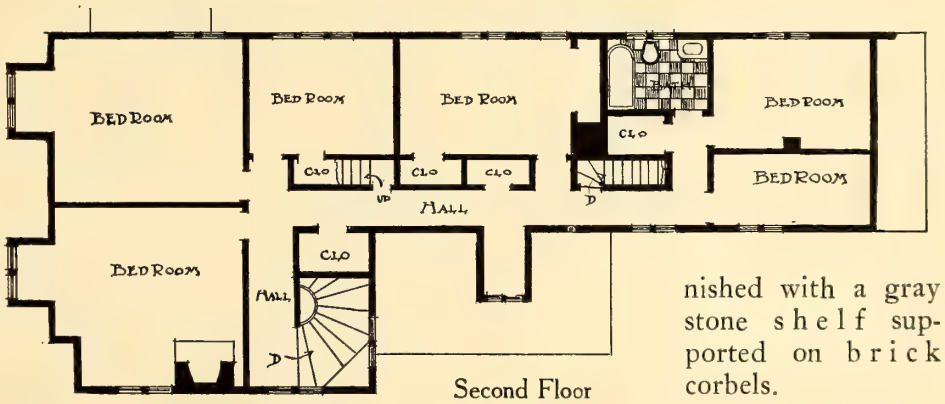
Bridgehampton, Long Island

By Paul Thurston

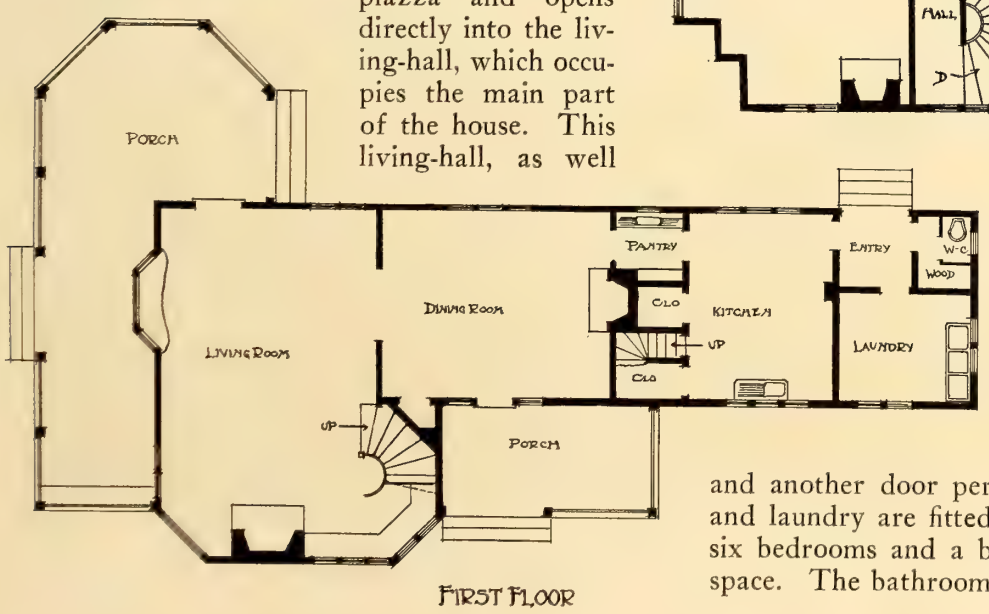
MISS QUIMBY'S summer home is designed with fine taste. The character of the house is found in its elongated and rambling effect, spread with its greatest breadth to the sea. The shingle-work of the first story, the half timber-work of the second story, and the overhanging and sloping roof of shingles make a harmonious whole. The shingle-work is left to weather finish a natural silver gray color, which is quite in contrast with the soft brown stain of the trim and beams, and the gray tone of the stucco-work.

The piazzas are admirably arranged, and are so placed that they do not obstruct the sunshine from any one of the rooms on the first floor, which is a very important feature in house-building.

The front entrance is reached from the piazza and opens directly into the living-hall, which occupies the main part of the house. This living-hall, as well as the entire house, is treated with exposed timber-work. The studs of the frame were dressed before being set up, and the exterior sheathing and interior partitions were beaded before being placed on to the framework and are shown in the room. The entire woodwork is of North Carolina pine, treated with hard oil finish and varnish. A graceful staircase, with an ornamental balustrade, sweeps up in a recess to the second story, under which there is a nook with a window-seat. The fireplace, built of brick, is furnished with a gray stone shelf supported on brick corbels.



Second Floor



FIRST FLOOR

The dining-room, separated from the living-room by an archway, is treated in a similar manner. It has exposures on two sides, insuring good light and a perfect ventilation. A large, open fireplace is built at one end of the room, and is constructed of brick with facings rising up to the ceiling. Simple shelves are placed at one side of the fireplace, on which are placed antique china. On the opposite side of the fireplace a door opens into the butler's pantry, and another door permits one to pass into the kitchen. The kitchen and laundry are fitted with all the modern conveniences. There are six bedrooms and a bathroom on the second floor and ample closet space. The bathroom has a Welsh tile floor, and porcelain fixtures

The porch and gables of the inner front

with exposed nickelplated plumbing. Messrs. Mann & MacNeille, of New York, were the architects of this very interesting house.

The stable, designed in keeping with the house, is well-equipped. It contains a large carriage-room, and a stable-room containing three stalls. The second story is finished off in two apartments, one for the coachman and the other for the storage of hay and feed. Much planting has been done about the property, and especially around the stable and tea-house. The whole has as a background a privet hedge.

The living-room has exposed timber-work in walls and ceiling

Exposed structure is the feature of the dining-room

One hardly needs to dwell on the charm of this delightful summer home—for a summer home it is, and nothing else, since houses of this size and style are only built at Bridgehampton for summer use. Moreover, it has all the characteristics of the summer home. Substantially built, its rambling plan, its ample rooms, its form of structure, and its graceful architecture are each and all eminently expressive of tht summer home of the best type.

And this type is that in which convenience and simplicity are supreme in every part. Miss Quimby's home is

The stable harmonizes with the house

ornate enough to meet the most exacting taste, but it is eminently simple and direct, so simple and direct as to be wholly structural, a style of building that is often the most satisfactory, and which is here perfectly so.

Of distinguishing characteristics, the most pronounced is the exposed finish of the interior. Simple as this is in conception, it often fails in execution. A fine success is obtained here, a success that is at once picturesque and homelike. It is not the least attraction of "Annesden" that with a uniform style of this kind the interior is so cheery and so homelike.

Playhouses for Children

By Mary H. Northend

Photographs by the Author

THE children of to-day are indeed fortunate, for many advantages and pleasures are theirs which were unheard of fifty years ago. Among other things once considered merely foolish innovations is the playhouse, which is fast becoming more and more popular. This happy solution of the problem of amusing the little folks has been hit upon in more cases than one, and the enjoyment which these little houses afford both parents and children is ample return for any trouble that may be taken to secure them.

At Marblehead Neck, Mass., is located one of these playhouses which is most artistic. It is the property of Mrs. Frank E. Peabody, and was built some years ago for her daughter's use. This little cottage is situated on the slope of a hill not far from the main house, and its shingle finish of deep red, with white window trimmings and door, harmonize well with the setting of shrubs and vines amid which it is placed. From a small porch, covered with rambler roses in their season, one enters the single large room which comprises the playhouse. This room is made light and cheery by a great many small casement windows which open outward like diminutive glass doors.

On the playhouse porch

The walls of the room are sheathed in hard wood and shellaced. The floor is of hard wood richly polished. Built-in shelves and a window-seat, under which may be stored unneeded things, are features which add greatly to the convenience of the playhouse. A generous supply of cushions grace the window-seat and easy chairs and give a touch of color to the furnishings. College banners and posters identify this room as a typical girl's den, and with its simple, sensible furniture it is an ideal place for a lark.

From an old bathhouse was evolved an interesting playhouse at Salem, Mass. It is on the water's edge, and, like the other, consists of one large room only. This little house, shingled in natural wood with white trimmings, has a broad veranda across the front overlooking the water and suggesting story-books and fancy-work, or afternoon tea parties. Some one cooked on the tiny stove in one corner of the cottage, and served in camp style by the enthusiastic young folks. An old piano, which has outgrown its usefulness in the home, does duty for the jolly impromptu dances which often terminate the evening's fun.

In Cohasset are two attractive little playhouses designed for practical use. One, the favorite retreat of a number of boys, is a simple little shingle house, with porches across both front and rear. The furnishings are just such as a boy delights in, for there is nothing elaborate to be damaged if the fellows "rough-house" it up a bit.

Above the main room is a small loft, in which the boys' footballs, boxing-gloves, tennis-raquets and net, baseball bats, and similar treasures are stored when not in use.

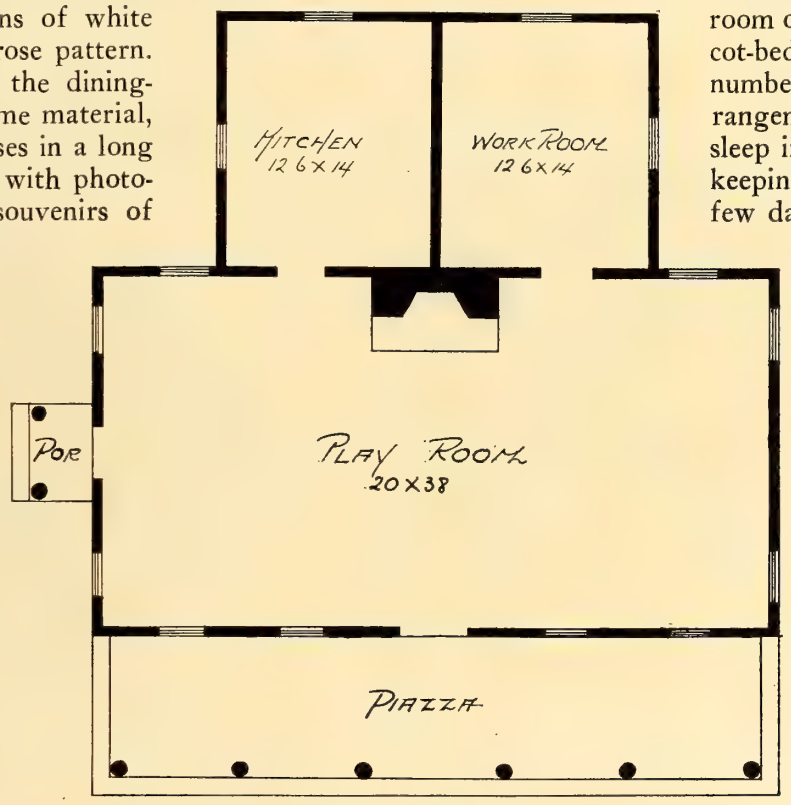
The other playhouse is a most attractive little four-room cottage, fully equipped for housekeeping on a small scale. The exterior is shingled, and a latticed porch, with built-in seats on either side of the doorway, is on the front of the house. Flowers and shrubs surround the playhouse, and brackets fastened under the windows support wooden boxes filled with flowers and vines.

On the first floor of the cottage there are three good rooms: a living-room, a dining-room, and a kitchen. The walls of these rooms are sheathed and the ceiling as well. Dainty ruffled curtains of white muslin hang at the windows and rugs cover the floors. In the living-room a number of

A playhouse fireplace

The Paine playhouse has the character of a real cottage

framed pictures are on the wall, and the table, easy chair and mantel-shelf all go to give a most home-like appearance. A white-enameled bookcase in one corner of the room has long curtains of white cretonne, figured with a wild-rose pattern. At the doorway leading into the dining-room hang portieres of the same material, and above it is a picture of roses in a long narrow frame. A shelf filled with photographs, bits of pottery and souvenirs of many a jolly vacation excursion takes the place of the conventional plate-rail in the little dining-room. A cretonne-covered couch, plentifully supplied with sofa pillows, invites one to lay aside care and indulge in delightful day-dreams, and the little round table, with its embroidered centerpiece and bowl of flowers, brings to one's mind a suggestion of dainty luncheons and merry suppers held in this cozy cottage. Opening directly from the dining-room is the handy little kitchen, in which these occasional repasts are prepared. Fitted up with a small stove, a sink, cooking utensils, it is really a very convenient place.



FIRST FLOOR

Playhouse on the estate of Wm. A. Paine, Philips Beach, Mass.

On the second floor there is one room only. This is finished with two cot-beds, a small washstand and a number of chairs. With such arrangements two girls could easily sleep in the playhouse if the idea of keeping house all by themselves a few days chanced to appeal to their imagination.

Woodbine or ivy climbing over a cottage shingled in natural wood produces a most charming effect. A one-room house of this description was attractively fitted up by its girl owner. Across one corner of the room were built a number of rounding shelves. From the top of this improvised cupboard hung a curtain of flowered cretonne, hiding the dishes, pans and small oil-stoves, which were pressed into service in the preparation of those little suppers to which the favored friends of the

A portable playhouse

The "garden house" at Magnolia

young mistress were occasionally invited.

Cretonne of the same design was used for the covering of a broad window-seat, and the numerous pillows scattered about in chairs and hammocks, while full, straight curtains of the same design hung at the windows and bookcases. The walls of the playhouse, which were of unpainted boards simply planed smooth were adorned with a great variety of unframed sketches in pencil, ink and water-colors. These pictures were the work of the young owner of the house, who was artistically inclined.

A playhouse at Yonkers, New York

A child's playhouse which is somewhat out of the ordinary is situated in Andover, Mass., on the estate of Mr. William M. Wood. The large two-story building, which has been given over entirely to the young people, is located on the edge of a beautiful artificial lake, and the board piazza, built out over the water and shaded by large willow trees, is a delightfully cool spot on a warm summer's afternoon.

On entering the building, one discovers that it is indeed a playhouse, but of a sort quite different from those already described. The whole lower floor is a single large room, at one end of which a little stage, equipped with a drop-curtain and footlights, has been arranged. The decorations of "Arden Theater," as it is called by the children, are in Japanese style, and all the furniture is of bamboo and wicker. Comfortable lounging-chairs and convenient little English tea-carts are set about here and there, and a tea-house gives a touch. This is designed for afternoon fêtes, and adds an Oriental touch to the room. Here the children are allowed to give all sorts of performances and amateur plays, which they enjoy.

Two playhouses at Scituate, Massachusetts

Playhouse built by Mrs. Frank E. Peabody

The photographs show other interesting playhouses.

1—Residence of E. W. Roy, Esq., at Lawrence Park, Bronxville, New York

A Group of Small Houses

Inexpensive Designs of Real Interest

By Francis Durando Nichols

EACH of the dwellings presented in this interesting group of small houses shows a design of distinctive character with distinctive features.

The first house (Figs. 1, 2 and 3) illustrated is a stucco house, built for Mr. E. W. Roy, at Lawrence Park, Bronxville, N. Y., from the plans of William A. Bates, architect, New York.

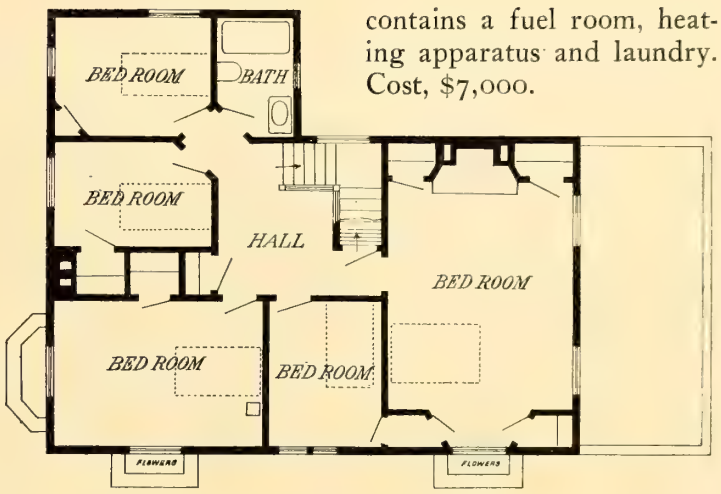
The entire framework is covered with metal lath and finished with a pebble dash stucco. The roof is shingled and stained green.

The interior has a white-painted trim and mahogany-finished doors.

The hall has an ornamental Colonial staircase. The fireplace in the living-room is built of brick. The dining-room has a high-faced fireplace and mantel.

The service end of the house is complete in its equipment.

The second floor is conveniently arranged. The bathroom is tiled and furnished with porcelain fixtures. The third floor contains servants' rooms and trunk room. The cellar contains a fuel room, heating apparatus and laundry. Cost, $7,000.



Mr. Claude Bragdon, of Rochester, N. Y., was the architect of Mr. Lansing C. Hoskins' house (Figs. 4 and 5) at Geneva, N. Y. Mr. Bragdon accepted the style of the Colonial house, such as is to be found in many of the typical New England villages. The interior has a white-painted trim. The walls are covered with artistic wall-papers of fine Colonial design.

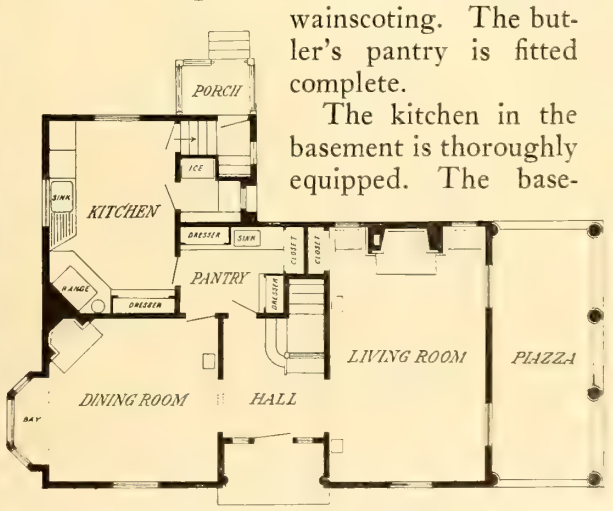
The hall has a low Colonial wainscoting and a Colonial staircase.

The living-room has a brick fireplace and an old Colonial mantel. Bookcases are built in at either side of the fireplace.

The dining-room has a seven-foot batten wainscoting. The butler's pantry is fitted complete.

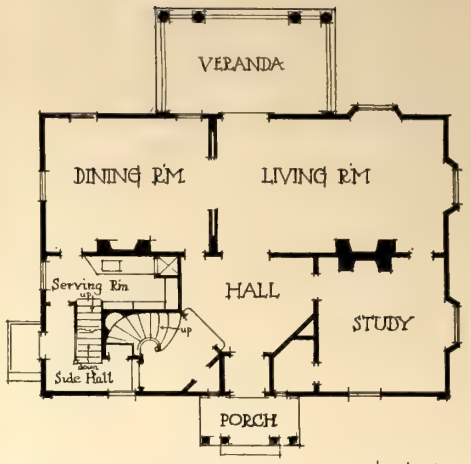
The kitchen in the basement is thoroughly equipped. The base-

2—The dining-room of Mr. Roy's house

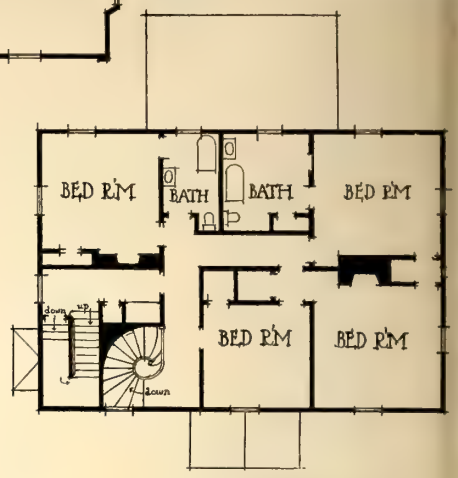


3—The floor plans of Mr. Roy's house

4—Mr. Hoskins' house is typical of the old Colonial



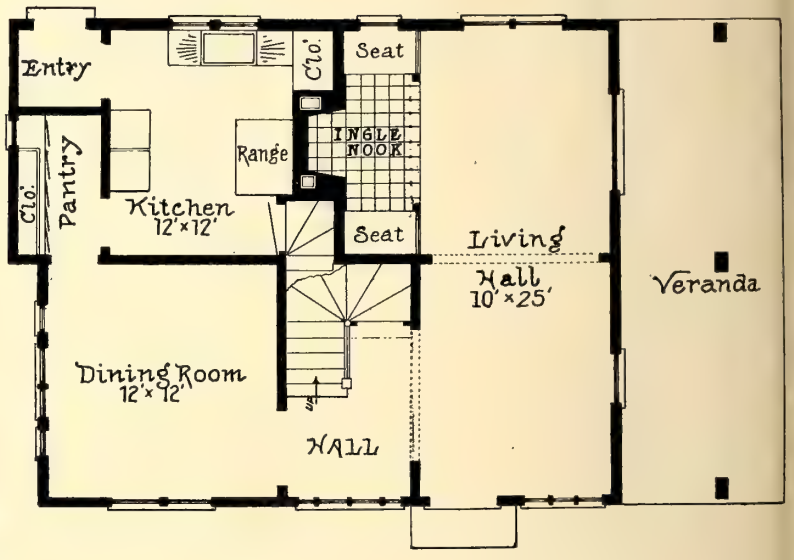
FIRST FLOOR PLAN



SECOND FLOOR PLAN

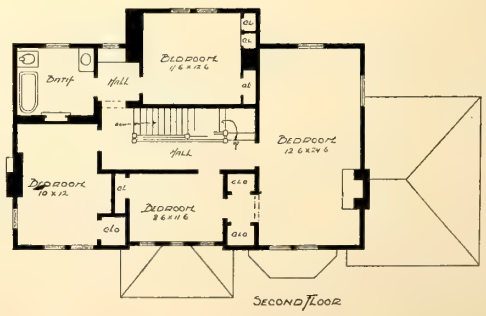
5—The plans of Mr. Hoskins' house are unique in their arrangement

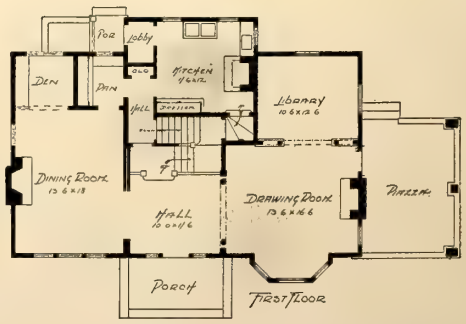
6—The house of Mr. C. W. Partridge is of wood with shingles on the exterior

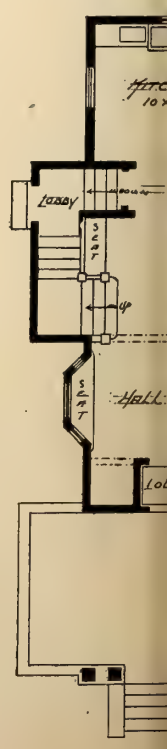


7—The feature of the first floor of Mr. Partridge's house is the inglenook

12—The house of Mr. Henry J. Martin at Dyker Heights, New York

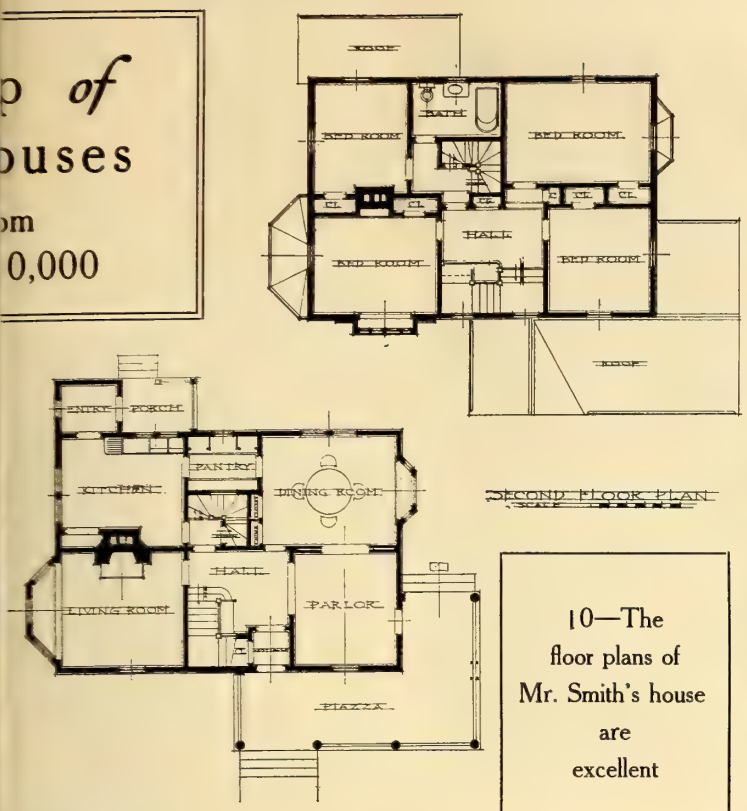






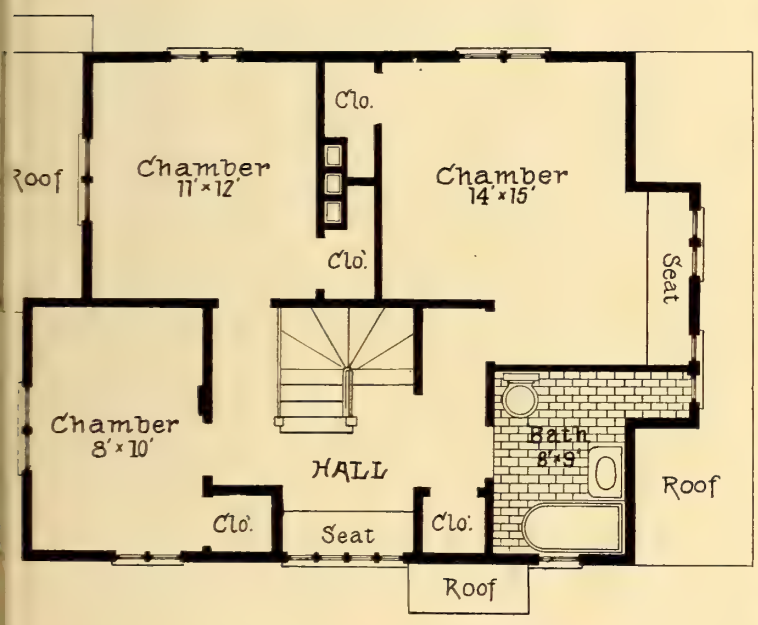
13—The plans of Mr. Martin's house are economical in arrangement

p of
houses
om
0,000



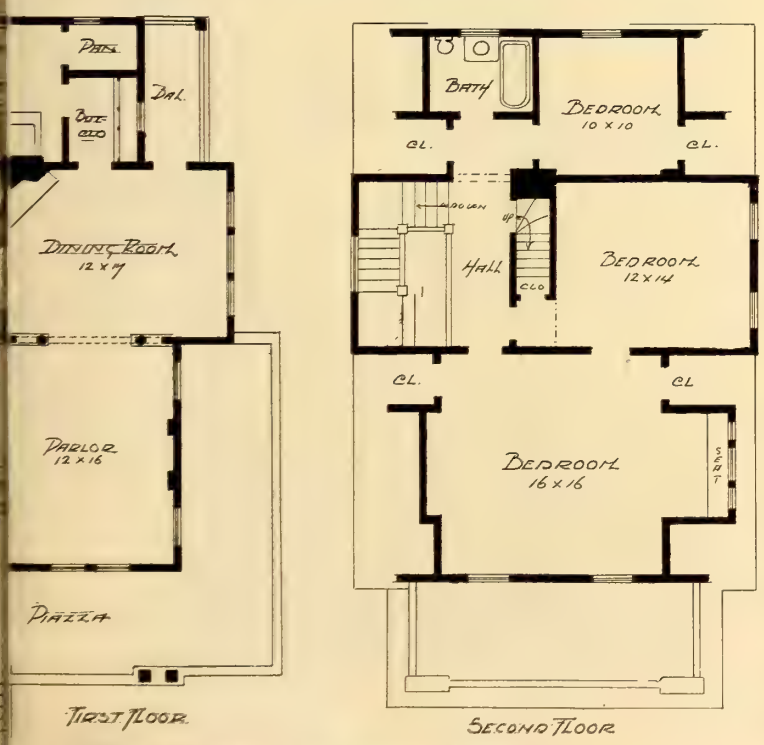
10—The floor plans of Mr. Smith's house are excellent

11—Residence of F. W. Smith, Esq., is of an interesting type



8—The second floor of Mr. Partridge's house is well arranged

9—Another view of Mr. Partridge's house



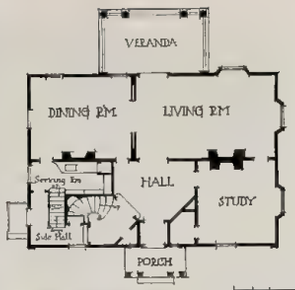
14—The floor plans of Mr. Arlington's house

15—Mr. Arlington's house is of the gambrel-roof type

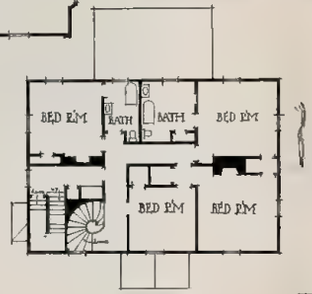
A Group of Small Houses

Costing from $3,000 to $10,000

4—Mr. Hoskins' house is typical of the old Colonial

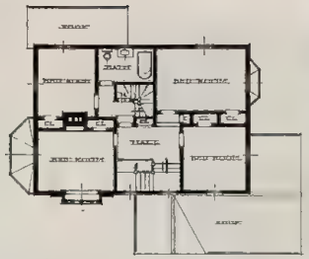


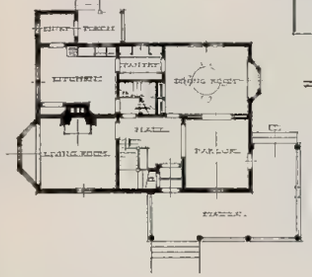
FIRST FLOOR PLAN



SECOND FLOOR PLAN

5—The plans of Mr. Hoskins' house are unique in their arrangement

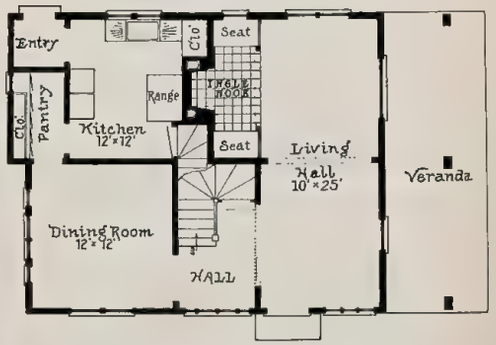




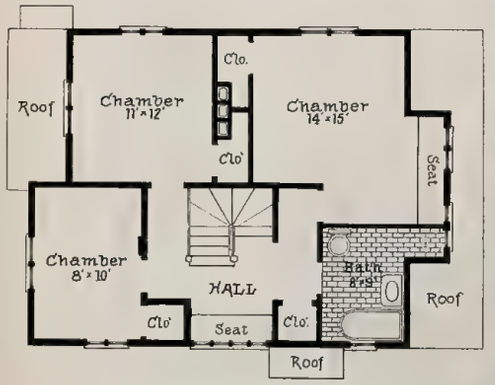
10—The floor plans of Mr. Smith's house are excellent

11—Residence of F. W. Smith, Esq., is of an interesting type

6—The house of Mr. C. W. Partridge is of wood with shingles on the exterior



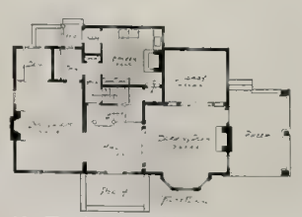
7—The feature of the first floor of Mr. Partridge's house is the inglenook



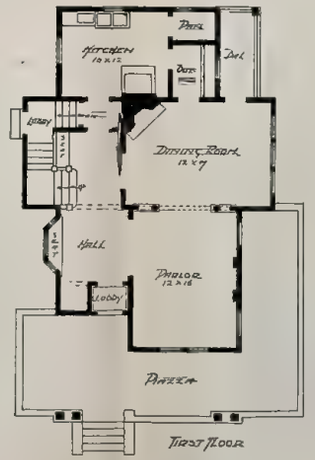
8—The second floor of Mr. Partridge's house is well arranged

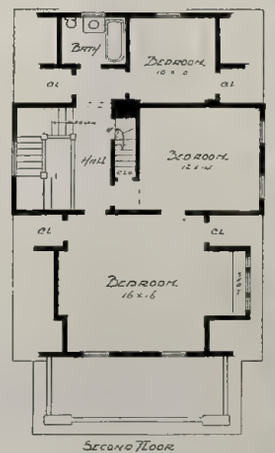
9—Another view of Mr. Partridge's house

12—The house of Mr. Henry J. Martin at Dyker Heights, New York



13—The plans of Mr. Martin's house are economical in arrangement





14—The floor plans of Mr. Arlington's house

15—Mr. Arlington's house is of the gambrel-roof type

ment also contains a laundry, cold-storage room, store pantry, fuel room and heating apparatus.

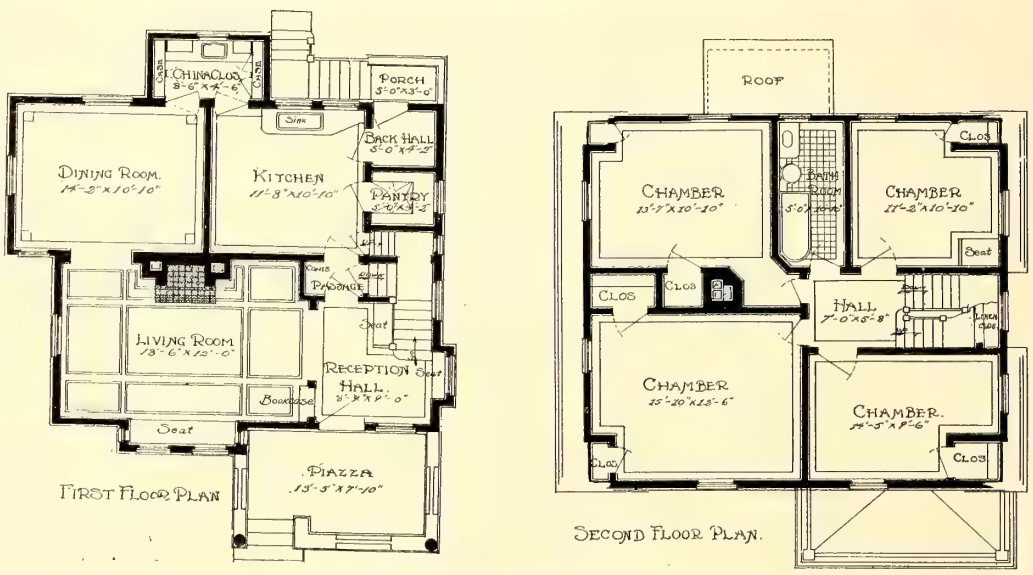
There are four bedrooms and a tiled bathroom on the second floor.

There is a servants' room and ample storeroom in the attic. Cost, $10,000.

Mr. C. W. Partridge's house (Figs. 6, 7, 8 and 9) at Scarsdale, N. Y., was built from the plans of William S. Philips, architect, of New York. It is a shingle house distinct from the others in the group. The interior has a white-painted trim. The inglenook, with its brick fireplace and hearth, is the feature of the living-room. There are three bedrooms and a tiled bathroom on the second floor. Cost, $3,500.

The house, Figs. 10 and 11, was built for F. W. Smith, Esq., at South Framingham, Mass., from the plans of Ralph Sawyer, of Boston, Massachusetts.

16—Mr. Williams' house is also of the gambrel-roof style



17—The plans of Mr. Williams' house are complete

The exterior is covered with cypress clapboards laid with eight inches exposure and painted white. The roof is of red slate.

The hall is trimmed with oak.

The pantries and kitchen are thoroughly equipped.

The second floor has a white-painted trim.

The house, Figs. 12 and 13, built for Mr. Henry J. Martin, at Dyker Heights, New York, was designed by Mr. C. Schubert, also of Dyker Heights. The building is covered with green-stained shingles. Cost, $4,000.

The house, Figs. 14 and 15, built for Mr. Edward Arlington, at Dyker Heights, N. Y., is also from the plans of Mr. C. Schubert. Cost, $3,000.

The house, Figs. 16, 17, 18 and 19, is another house of the gambrel-roof style, built for Mr. Williams at Newton, Mass., from the plans of Edward Stratton, of Boston, Mass. Cost, $3,000.

18—The fireplace is the feature of the living-room of the Williams' house

19—The staircase in the hall of the Williams' house

Grape Culture in France

By Jacques Boyer

THOMERY is a picturesque and quite unique French village about four miles from Fontainebleau, on the southerly bank of the Seine. To the eye of the visitor it presents an almost uninterrupted succession of white-washed walls covered with flourishing grape-vines. Most of the houses and the garden walls are so covered. In autumn golden grapes cluster everywhere. The grapes are kept in a fresh condition, by methods peculiar to the district, to await a favorable market.

Practically only two varieties of grapes are cultivated at Thomery, the Golden Chasselas of Fontainbleau, which probably originated in Cahors or in Piedmont, and the Frankenthal, which was imported from Germany about 1840. The wood of the former is reddish, and its leaves are grayish-green above, smooth beneath and deeply incised. The ripe grapes have a beautiful golden hue. There are two sub-varieties of the Frankenthal. The variety with pale green leaves yields finer grapes than the other, the foliage of which has a reddish tint. The Ciota chasselas is cultivated in pots for exhibition. The Cesar, an oval black grape with a tough skin and excellent keeping qualities; the black and white Muscats, with globular fruit; and the Rose Malaga, a large oval grape of the color of red wine lees, which ripens only in favorable exposures, are also cultivated to some extent.

The vines are planted in espaliers and counter espaliers. The high walls are ten feet in height and placed at varying distances, averaging one hundred feet. Between them lower walls are placed. The high walls are surmounted by pitched tile roofs, the ridges of which are protected by curved tiles. These walls also carry iron supports on which, about the first of September, planks or glazed sashes, twenty inches wide, are placed to protect the grapes from rain. Similar sashes are placed on the small walls when they are needed.

Various systems of trellising are employed, with horizontal, vertical and oblique wires. Many of the high walls bear five horizontal wires nineteen inches apart, the lowest sixteen inches above the ground, and the highest twenty-seven inches below the top of the wall. The vines are planted sixteen inches apart. In hot and dry situations, a single vertical wire is used for each vine. Wires inclined thirty degrees to the horizontal are used to a considerable extent. The vines are planted twenty inches apart, and are pruned and trained as in the case of horizontal wiring, except that twice as many canes are left. The first counter espalier, or detached trellis, is set six or seven feet from the wall, and the others follow at intervals of fifty-two inches. These trellises may have either horizontal or vertical wires. The vines are often pruned to three or four canes and trained in the shape of a fan.

Vines of Ciota chasselas in pots

The fine clusters of golden grapes, for which Thomery is celebrated, are not produced without much care and labor, in pruning, tying, spraying, pinching back, thinning, bagging the grapes and removing superfluous leaves, buds and tendrils. When the green shoots have attained a

The vineyards of Thomery

Covering espaliers with netting to protect them from birds

Gathering grapes at Thomery

Storehouse, with vine branches in bottles of water

The espaliers of Thomery at harvest time

length of five or six inches the weak and apparently barren shoots are broken off with the fingers; two weeks later the tendrils are pinched off and the suckers are removed entirely from the older vines, but are merely pinched back on the young vines, as their complete removal might cause too rapid growth of the vine. When the grapes have grown to the size of peas they are thinned with scissors, from one-fourth to one-third of the grapes of each bunch being removed. Thinning increases and equalizes the size of the grapes that are left and hastens their ripening. At Thomery the grapes are usually thinned between July 10 and August 10. In the second tying, which is made necessary by the growth of the shoots that were too short to be tied in the spring, some of the leaves which touch the wall are removed in order to give light and heat to the grapes, and many more leaves are removed during the first half of September.

Fungous diseases are combated by spraying the vines with mixed solutions of copper sulphate and lime (Bordeaux mixture). The ripening clusters are enclosed in bags of horsehair or paper to protect them from bees, wasps and flies, and the vines are covered with nets to exclude birds. The grapes are gathered about the middle of October, on fair but slightly cloudy days, if possible.

The finest clusters are cut with some of the wood attached, for the purpose of keeping them fresh. The clusters of the second grade are also kept until winter, but by the dry method, which does not require the wood to be cut with them. The remaining grapes are immediately shipped to Paris, packed in baskets containing about thirteen pounds each.

As the clusters are gathered the imperfect grapes are removed with scissors, and the trimmed bunches are laid carefully on trays covered with straw or ferns and carried on barrows to the packing and storage rooms.

In the dry method of preservation, which was used exclusively until the middle of last century, the grapes are simply laid in small trays of osier lined with straw compactly arranged in the storehouse. The method is simple and cheap, but the grapes become withered and wrinkled if long kept. Larpenteur conceived the idea of immersing the ends of fruited branches in water, and found that in this way grapes could be kept for two months. Charmeux and Valleaux improved the process, to which an experience of half a century has given the following form.

Bagging grapes to protect them from insects

The storage rooms, which are preferably situated on the first floor of the building, are fitted with shelves which have holes for the reception of bottles containing about a gill of water. The storehouses of the largest establishments often contain forty thousand bottles. A piece of charcoal is put in each bottle to keep the water sweet, and the end of the vine stem is then inserted. The doors and windows of the room are kept closed. Darkness is an important factor, as it prevents fermentation inside the grapes. The temperature is kept as uniform as possible, and little above the freezing-point, 36 or 37 degrees Fahrenheit. The air of the room must be very dry, as dampness produces mold and decay. By this method, which requires constant care, the grape-growers of Thomery keep fresh every winter from two hundred and seventy-five thousand to three hundred and fifty thousand dollars' worth of golden chasselas and other fine table grapes.

A House with a Guaranteed Cost

A House That Can Be Built for Seven Thousand Dollars

MR. WILLIAM A. SWASEY, of New York, is the architect of the house presented on this page. Mr. Swasey has chosen the bungalow type of house for his design. Yet, while it has the characteristics of the low sloping roof of the bungalow, it is in reality a two-story house with the sleeping-rooms placed in the second story, and the roof sloping down over the piazza gives the desired low effect without impairing the rooms of the second story.

The house is constructed of frame throughout, with the perpendicular walls striped and covered with metal lath and cement plastering with a finishing coat of cement and coarse gravel. All the exposed rafter ends are left in the rough and stained a very dark brown. The roofs are covered with shingles dipped in a moss-green stain. The ceiling of the piazza is plastered, and its floor is stained the same as the other exterior work.

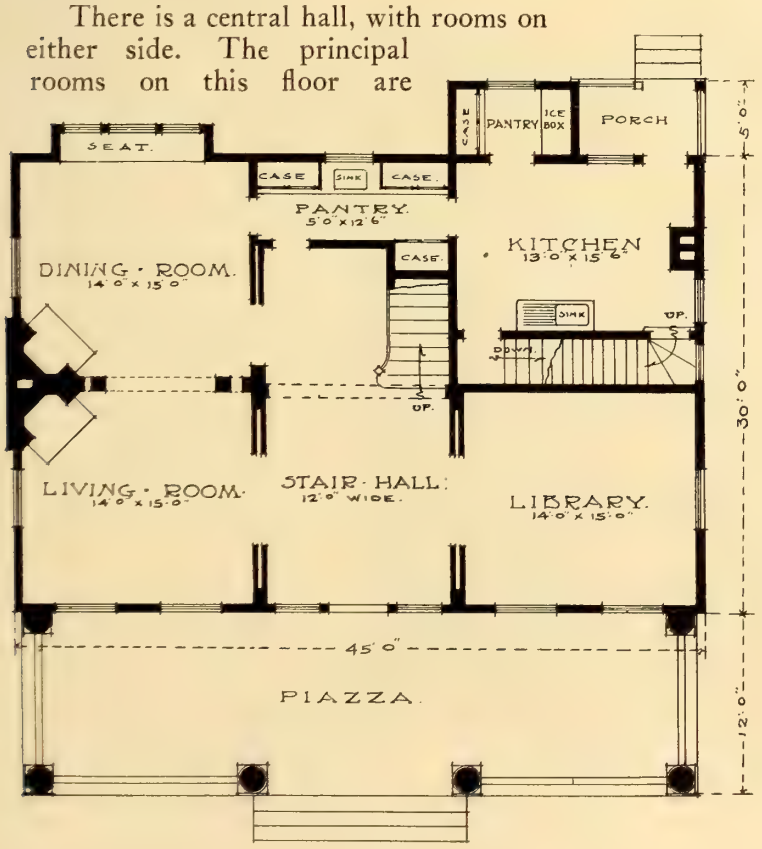
There is a central hall, with rooms on either side. The principal rooms on this floor are trimmed with birch and stained and finished in mahogany. The hall contains an ornamental staircase of good design.

The living- and dining-rooms are separated by an archway supported on columns. Both of these rooms have open fireplaces furnished with brick facings and hearth and Colonial mantels. The kitchen and pantries are well equipped and are trimmed with yellow pine finished material.

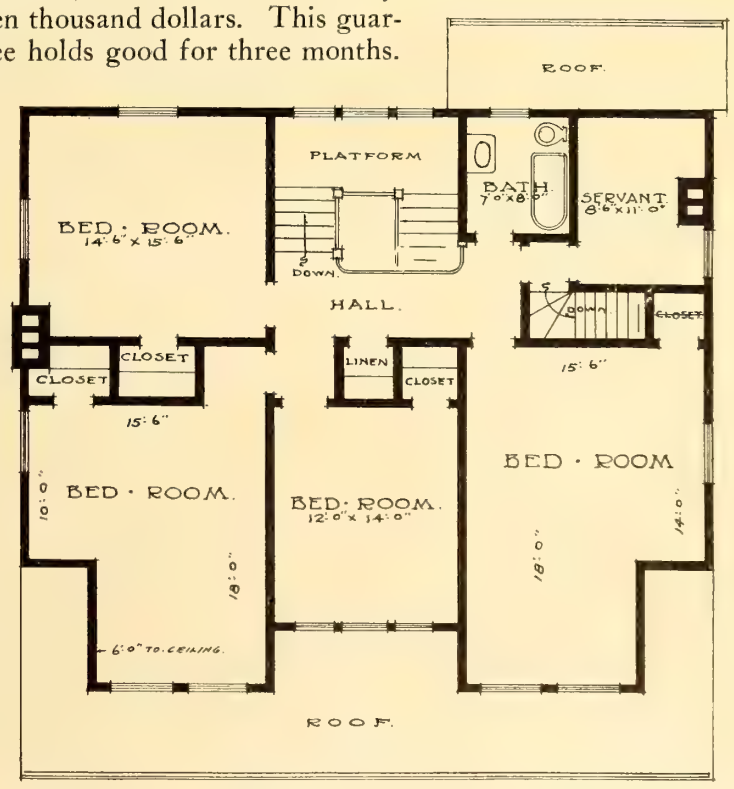
The second floor contains four bedrooms, bathroom and servants' bedroom. This floor has white enameled trim and birch doors finished in mahogany. The bathroom has a floor covered with interlocking rubber tile, and the walls are wainscoted to the height of five feet with cream glazed vitrified tile, with sanitary cap and base.

The cellar contains a laundry, servants' toilet and a hot-water heater with ample capacity to heat all parts of the house through direct radiation.

The area of the house is thirty feet by forty-five feet, and the architect guarantees to build this house, under normal conditions, within a radius of sixty miles of New York, for seven thousand dollars. This guarantee holds good for three months.



· FIRST · FLOOR · PLAN ·



· SECOND · FLOOR · PLAN ·

The Arms of the How family, the original proprietors in 1683

The "Wayside Inn"

By Esther Singleton

The photographs accompanying this article are Copyrighted, 1898, by E. R. Lemon

Sign of the "Wayside Inn"

FEW buildings in this country can boast of two hundred and twenty-three years of continuous history as can the "Red Horse Tavern" of Sudbury, Mass., twenty-two miles from Boston, and immortalized by Longfellow as the "Wayside Inn," probably inspired by "The Tabard" and Chaucer's "Canterbury Pilgrims." Those who love to restore the people and quaint manners and customs of past centuries in places that have legendary, historical or romantic associations can find no trace of Chaucer's hostelry in Southwark when they cross London Bridge to visit old and picturesque St. Saviour's, where an older poet than Chaucer—John Gower—lies in his richly carved and painted tomb; but the traveler who wishes to see a typical American inn of Colonial and Revolutionary days can happily visit a good specimen at Sudbury. Here, too, he may picture and people the past; for, being situated on the old Post Road from Boston to New York, the "Wayside Inn" has entertained all sorts and conditions of men and women.

Among the noted travelers who have been guests of "The Red Horse" may be mentioned Judge Sewall, the famous witchcraft jurist of Massachusetts, who noted in his diary in 1700 that he stopped at How's Tavern in Sudbury. General Washington was also here on several occasions: on his way to take command of the army at Cambridge; on his return to the Hudson River; and during his tour in New England when President.

General Burgoyne also rested here when he traveled as prisoner from Albany to Boston. Among other noted travelers who have enjoyed its hospitality were Madame Knight, the Marquis de Lafayette, General Artemas Ward, John Adams, John Hancock, Daniel Webster, Rufus Choate, and many distinguished men of letters.

Twice a week the mail coach passed, and the stage brought many passengers from time to time. Guests also arrived in private carriages and coaches of all descriptions, and upon horseback; and in the winter in sleighs of every variety from the rude box, or basket, upon runners of the countrymen to the painted shell of the rich Bostonian, luxurious with fur robes and drawn by spirited horses whose harness jingled with merry silver bells. Sleds piled high with dead deer and other game frozen stiff on the way from the hills and mountains of New York and Vermont to Boston were often stored while the huntsmen and drivers thawed out in the cheerful taproom and refreshed themselves with a night's rest. In the summer time flocks of geese and turkeys, and droves of cattle and hogs passed on their way to market, or were sheltered by their drovers in the yards at night. Now the automobile takes the place of the lum-

Coach used by General de Lafayette at the laying of the corner-stone of Bunker Hill Monument

The wainscoted sitting-room

bering stage-coach and cattle and poultry travel by rail; but, although manners and customs have changed, the old inn has not, nor have the great forest trees that waved their strong branches over the Indian wigwams long before the totem of the "Red Horse" was hung in their midst.

The house is fortunate in being far from the town and isolated in its green frame of oaks and elms. Far across the meadows and rolling hills the windows gleam red with the glow of the firelight within; and on many an autumn night Longfellow's description is still appropriate:

"Round this old-fashioned, quaint abode
Deep silence reigned, save when a gust
Went rushing down the country road,
And skeletons of leaves, and dust
A moment quickened by its breath,
Shuddered and danced their dance of death,
And through the ancient oaks o'erhead
Mysterious voices reigned and fled."

The famous hostelry was built about 1686 by David Howe, the son of John Howe, of Marlboro, Mass., and it was known as Howes' (or How's) Tavern until 1746, when Ezekiel Howe hung up the sign of "The Red Horse." Ezekiel was a man of no little importance, as was often the landlord of a tavern in Colonial days. He became an officer in the Revolutionary Army, and his commission as colonel, signed by John Hancock, is still extant in Sudbury. On his death in 1796, his son, Adam, became landlord of "The Red Horse," which he kept until his death in 1840. From this date until 1860, his son Lyman was the proprietor. He was also a man of importance in the community, was justice of the peace, and known in Sudbury as "the Squire," under which name Longfellow describes him in his "Tales of a Wayside Inn," published in 1863.

To Longfellow the old inn owes its celebrity. It was a favorite rendezvous in the fifties for the poet and his friends who told each other tales in verse as they sat round the fireside and were charmed with interludes from the magic violin of Ole Bull.

The inn Longfellow describes is as follows:

"As ancient is this hostelrie
As any in the land may be,
Built in the old Colonial day,
When men lived in a grander way,
With ampler hospitality.
A kind of old Hobgoblin Hall,
Now somewhat fallen to decay,
With weather stains upon the wall,
And stairways worn, and crazy doors,
And creaking and uneven floors,
And chimneys huge and tiled and tall.

A region of repose it seems,
A place of slumber and of dreams,
Remote among the wooded hills!
For there no noisy railway speeds,
Its torch-race scattering smoke and gleeds;
But noon and night, the panting teams
Stop under the great oaks, that throw
Tangles of light and shade below,
On roofs and doors and window-sills;
Across the road the barns display
Their lines of stalls, their mows of hay;
Through the wide doors the breezes blow;
The wattled cocks strut to-and-fro,
And, half effaced by rain or shine,
The Red Horse prances on the sign."

When Longfellow's "Tales of a Wayside Inn" were published "The Red Horse" was closed; for Squire Howe died in 1860. The house still remained in possession of the Howe family until 1897, when it was sold to Mr. E. R. Lemon, who restored it to its old appearance; hung up the sign of "The Red Horse" once again, and filled the rooms with a fine collection of old furniture and old New England curios.

Tap-room with its wooden portcullis

The dining-room has an ancient crane and kettle

Several years ago a traveler described the historic house as follows:

"Coming from the direction of Marlborough, at a little distance, the gambrel roof of the 'Wayside Inn' peeps above a dense mass of foliage. A sharp turn of the road, which once passed under a triumphal arch composed of two lordly elms, and you are before the house itself. Formerly the capacious barns and tall sign-posts stood across the old grass-bordered country road, which leads straight up to the tavern door. The general appearance of things, however, has been much altered by the building of a new macadam road past the spot by the State. But let us go in.

"Everything remains as of old. There is the bar in one corner of the common room, with its wooden portcullis, made to be hoisted or let down at pleasure, but over which never appeared the ominous announcement, 'No liquors sold over this bar.' The little desk, where the tipplers' score was set down, and the old escritoire, looking as if it might have come from some hospital for decayed and battered furniture, are there now. The bare floor, which once received its regular morning sprinkling of clean white sea-sand; the bare beams and timbers everhead, from which the whitewash has fallen in flakes, and the very oak of which is seasoned with the spicy vapors steaming from pewter flagons, all remind us of the good old days before the introduction of steam and the multitudinous uses of electricity, and the flood of new ideas. Governors, magistrates, generals, with scores of others whose names are remembered with honor, have been here to quaff a health or indulge in a drinking-bout.

"In the guests' room, on the left of the entrance, the window-pane bears the following recommendation, cut with a gem that sparkled on the finger of that young roysterer, William Molineux, Jr., whose father was the man that walked beside the King's troops in Boston to save them from

A typical American inn of Colonial and Revolutionary days

the insults of the townspeople—the friend of Otis and of John Adams:

" 'What do you think
Here is good drink
Perhaps you may not know it;
If not in haste do stop and taste
Yon merry folk will shew it.
Wm. Molineux, Jr., Esq.
24th June, 1774, Boston.'

"The writers' hand became unsteady at the last line, and it looks as though his rhyme had halted while he turned to some companion for a hint, or, what is perhaps more likely, here gave manual evidence of the potency of his draughts.

"A ramble through the house awakens many memories. You are shown the travelers' room, which they of lesser note occupied in common, and the State chamber where Washington and Lafayette are said to have rested. In the garret the slaves were accommodated, and the crooknecks and red peppers hung from the rafters. Unfortunately, the old blazonry and other interesting family memorials have disappeared under the auctioneer's hammer."

The rooms are filled with a fine collection of old furniture

"The Red Horse" to-day has more of a home-like appearance. The sitting-room, or parlor, with its claw-and-ball-foot mahogany chairs, comfortable sofa, tall clock, old prints and portraits, spider-legged tables, rugs, books and curtained windows, seems more like the room of a private country house than of a tavern. Here, too, are some choice pieces of furniture, including an excellent mirror with carved and guilt frame, and an ancient piano. The paneling is excellent, though very simple.

In the dining-room may be seen an old fireplace where the kettle still hangs on the crane and the big log crackles, and sends its ruby sparks up to the broad chimney as of yore.

The old tap-room is the most interesting corner of the house. Here the original heavy timbers prove how much more attractive is an open ceiling than a plastered one. On the left of the door is the old bar. The fireplace is ample, and an old oak "butterfly" table, so called from the

The inn is isolated in its green frame of oaks and elms

Bedroom occupied by Lafayette

shape of the support of the leaf, delights the eye of the antiquary and lover of old furniture. Among the other interesting pieces in Mr. Lemon's collection are an oak settle-chair, or chair-table, owned originally by Colonel Jonathan Rice, of the Revolutionary Army, who kept the Rice Tavern in Sudbury; an old maple writing-chair in the Windsor style with drawer under the seat, and owned by General Artemas Ward, of the Revolutionary Army, and given to the "Wayside Inn" by his descendant, Samuel Ward, of Shrewsbury, and removed from the old Ward House in that town by Mr. Lemon; two of the cabin chairs from the flagship "Hartford"; a mahogany claw-foot arm-chair, owned by John Lemon, appointed postmaster of Beverly, Mass., by John Adams; and a carved oak writing-desk, dated 1684. Not the least interesting article in his collection is the old carriage seen in the accompanying illustration, and which has conveyed many a tired traveler to the hospitable door of "The Red Horse."

Portrait of Ole-Bull, the celebrated violinist

The old carriage represented has an interesting history, for in it General Lafayette drove to Boston to be present at the laying of the corner-stone of the Bunker Hill Monument. On his arrival in Boston for this great occasion he said to his friends: "In all my travels through the country, I have made Bunker Hill my polar star." On that memorable day, June 17, 1825, when Daniel Webster delivered the address, Lafayette received from the Worshipful Grand Master of the Grand Lodge of Massachusetts, John Abbot, who laid the corner-stone, the trowel and spread the first layer of cement.

It is a rare old place, dowered with charms both new and old. For among American inns it stands unique, at once so old and so livable, an inn really ancient as buildings are counted in America, and of more than respectable antiquity as habitated structures are counted anywhere. It is restful, in these days of lofty modern hostelries, to seek quiet in the fine old rooms of the "Red Horse Tavern." Here the whole world is at peace, and there is naught amiss. It is true the motor-car is a bit out of place beneath these dark old walls, but not more so than before many an older building elsewhere. Here, at least, these very modern contrivances help to keep the old inn alight and alive, for they bring it goodly custom, and help to make it to-day quite as much of a landmark as it was by right in the older time.

No! if the coach used by General de Lafayette appears a bit out of keeping with modern ideas, it was surely in the very finest of style when it was first used. And the finest carriage of any age is none too good for mine host of the "Wayside Inn." So the latest of motor-cars may siss and splutter without the door, and, with all its splendor and finery, perform no other task than did the ancient stage-coach which, like its modern successor, served the humble purposes of conveying guests to this hospitable place. And that the hospitality was hearty and welcome the history of the old inn tells us many and many a time. We may be assured that the great folk of bygone days would not have stopped here had they not been certain of a hearty welcome and comforting fare. The quaint old rooms still speak aloud the homeliness of the place and tell us—almost—what sort of folk once congregated here and the fare they had.

The history of the past and the present are both united and exemplified in this rare old building. Its old walls witnessed alike the rise of the republic and its later boundless expansion. If in our own day it is no longer the scene of great historic events, if our national leaders no longer give it distinction and fame, it is only because the center of our national life has shifted since its more brilliant days. Its rooms are still spacious and quite as available as they ever were; but if it is no longer noted for its guests, it has but entered upon a newer and greener old age, that, we may trust, will endure for many years to come. Long may it last, for its fame is settled and sure!

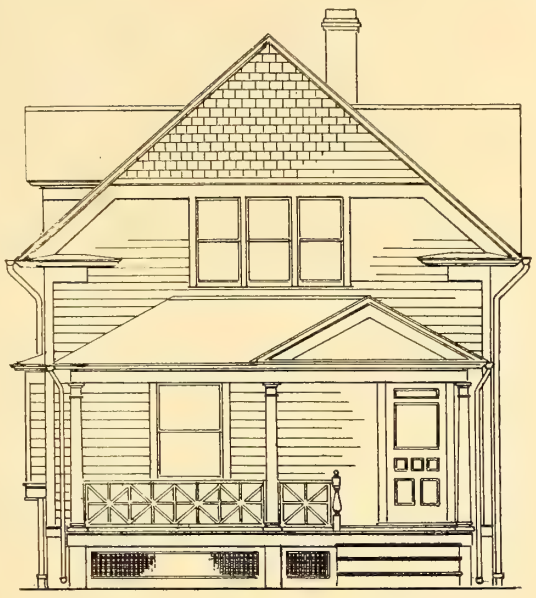
Bedroom occupied by Longfellow

The Rochester Cheap Cottage Competition

The First and Second Prize Designs

By Sarah Tompkins Smith

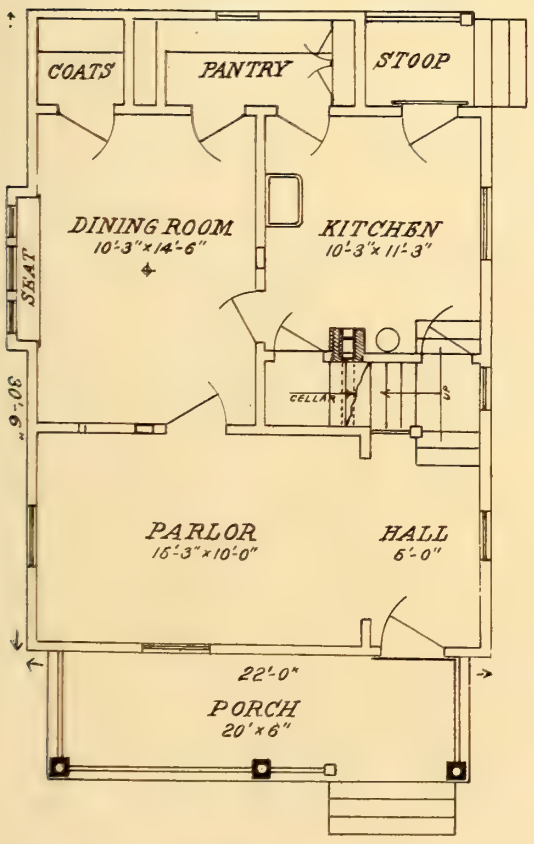
A COMPETITION recently conducted by the Chamber of Commerce of Rochester, N. Y., for designs for cheap cottages has produced results of deep general interest which are bound to attract wide attention. The problem presented in this competition was one of the most difficult known to architects. It is true it did not call for grandiose design nor for splendid drawings; but it was concerned with one of the most practical of all architectural problems, the housing of people of very moderate means in an exceedingly economical manner that would be at once hygienic and sound, and if not beautiful in expression, as the phrase is generally understood in architecture, at least adequate and satisfying.



$1,500 design—Second prize

It was a competition that attracted wide attention, more than a hundred competitors submitted their ideas to the committee of judgment. The constitution of this committee was itself of interest, since it was composed of an architect, a fire-marshal, a contractor, a lumberman and a manufacturer. Obviously it was a practical committee of the most practical kind, a committee that was certain to take into consideration the actual practical conditions involved, and not be influenced by esthetic requirements, as is the popular notion anent architects.

The problem was, in brief, the preparation of designs of houses of three costs: first, not to exceed $1,500; second, not to exceed $1,250, and, third, not to exceed $1,000. The type of structure thus proposed was, it may at once be seen, quite out of the ordinary, since dwellings of any of these costs are very rare, and even when built seldom possess any exterior grace of finish, or any special development of sanitary principles. The latter element is, indeed, the most important one to be considered in any dwelling-house, be its cost large or small; but not the least of the triumphs of this competition has been the stress laid upon the sanitary aspects of the houses, and the solution of the problems involved in a sanitary way.

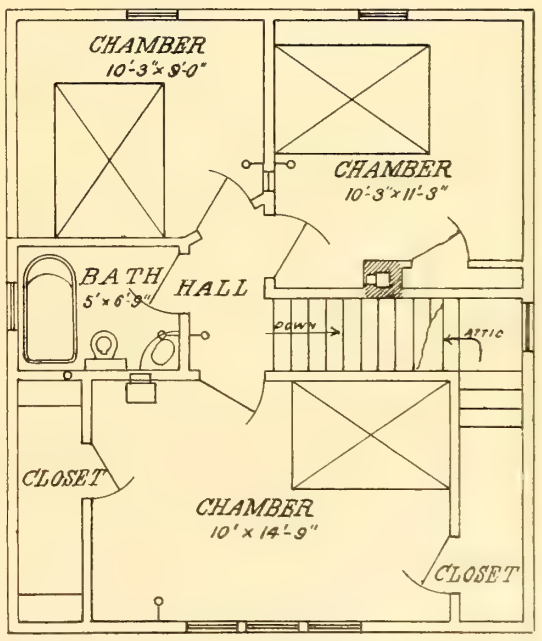


First floor. $1,500 design—Second prize

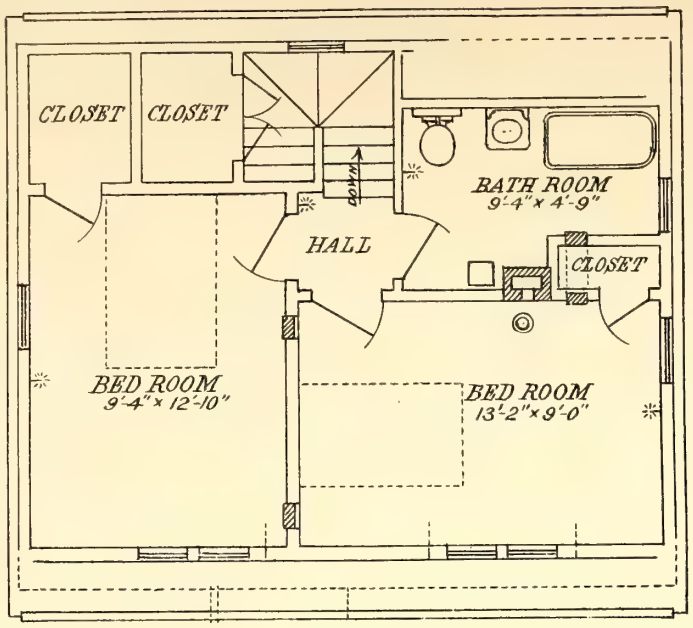
Somewhat strangely, it may appear at first sight, the first prize in the first two classes was won by a young Rochester girl, Miss Esther M. Byers. As a matter of fact, this is not at all singular. Architects of standing are not given to the study of the problems involved in this competition; like most men they have their living to make, and their studies and work are quite naturally concerned with more ambitious structures. But Miss Byers is on the threshold of an architectural career that bids fair to be more than usually successful. She could give, as a busy architect could not, time to the profound study of this difficult problem. Moreover, as a woman she could be depended upon to attack her work more from the domestic side of the case than a man whose acquaintance with the livability of a house must, in most cases, be more or less secondary. But, whatever the reason, she is to be heartily congratulated on her success, for she has developed an interesting type of cheap house.

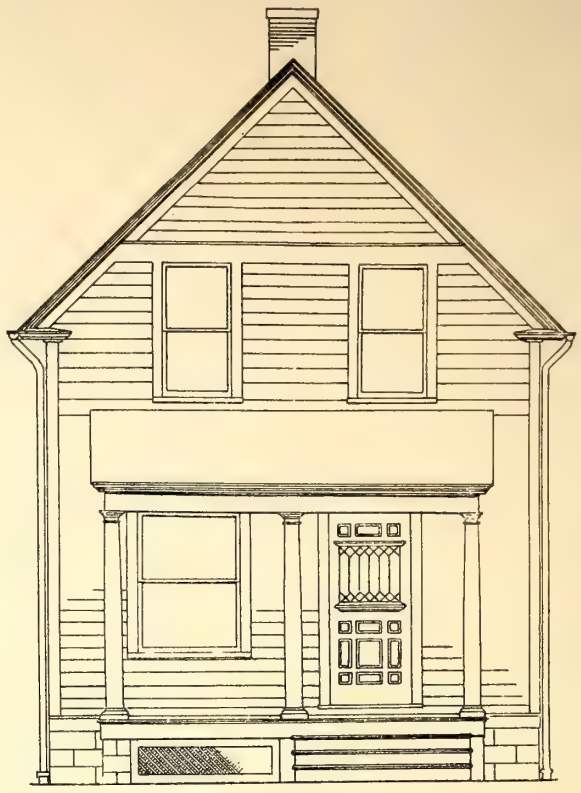
In houses of the low cost demanded in this competition there is little room for difference save in dimensions. Each has its own bathroom and kitchen; and, after these most important apartments, the single question is of space that may be provided at the cost allowed. The first prize design shows four rooms on the first floor: living-room, dining-room, kitchen and a fourth room which may be used as a bedroom or library. In the design for the second prize there are two rooms on this floor, a living-room and kitchen. The dwelling for the $1,000-house has also two rooms, a kitchen and living-room; but here the hall is on one side of the house, while in the $1,250-house it occupies the center. In some of the prize designs the first floor contains a parlor, surely a most unnecessary room in dwellings of the cost of these.

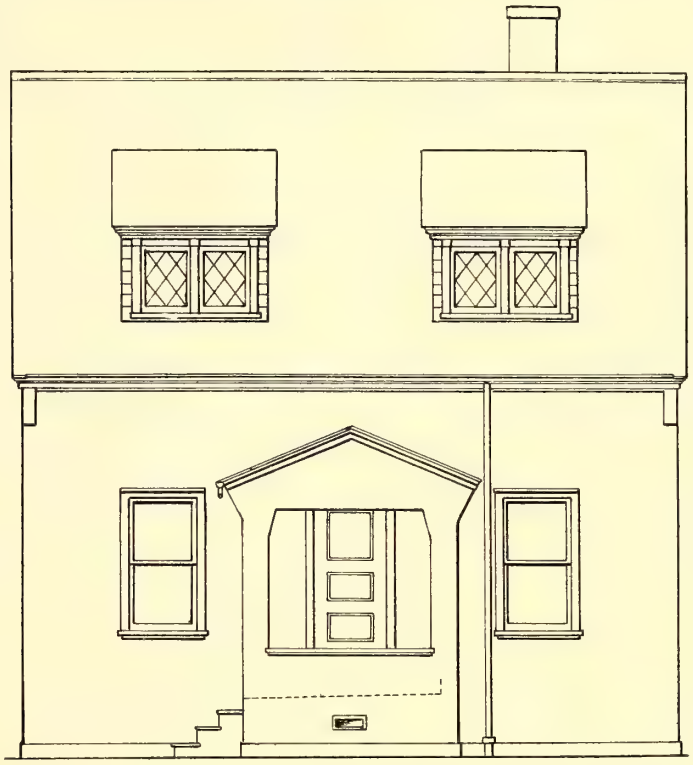
There is no waste space in any of these houses. The planning is throughout sound and economical. The designs and specifications show an admirable economy of structure and a wise use of material. The results are, in each case, pleasing and satisfactory, without pretense and eminently practical.

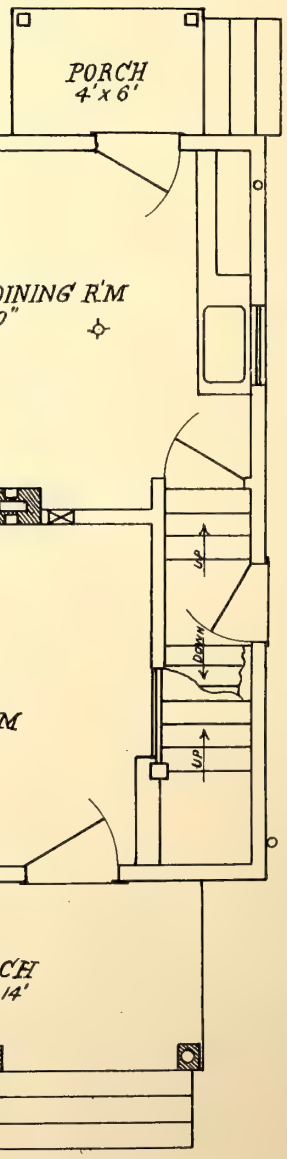


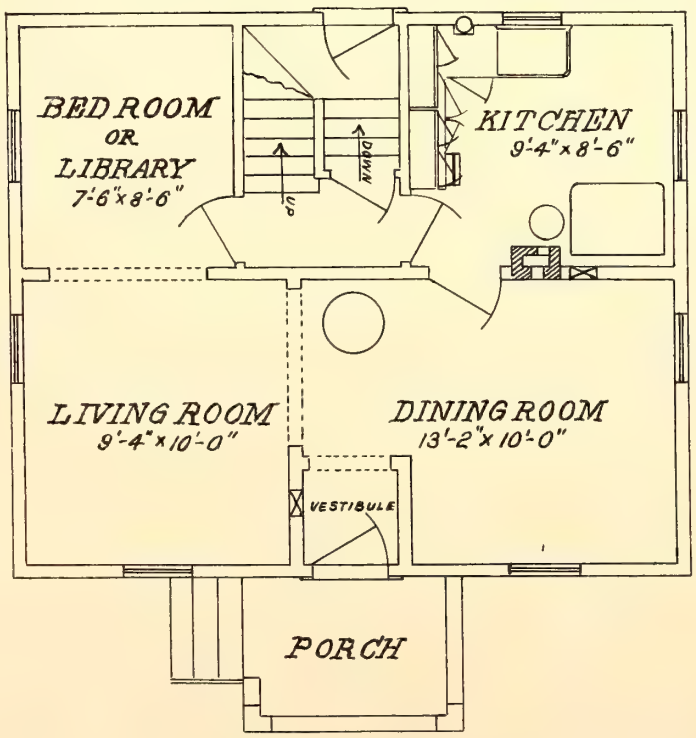
Second floor. $1,500 design—Second prize





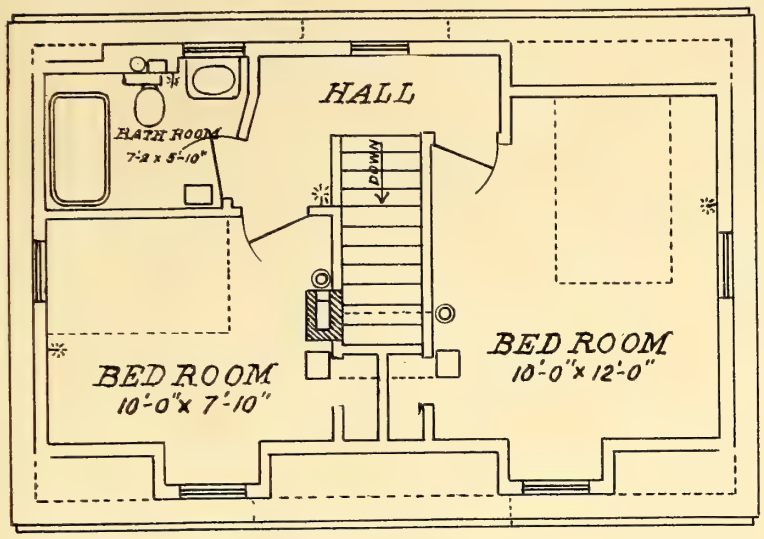


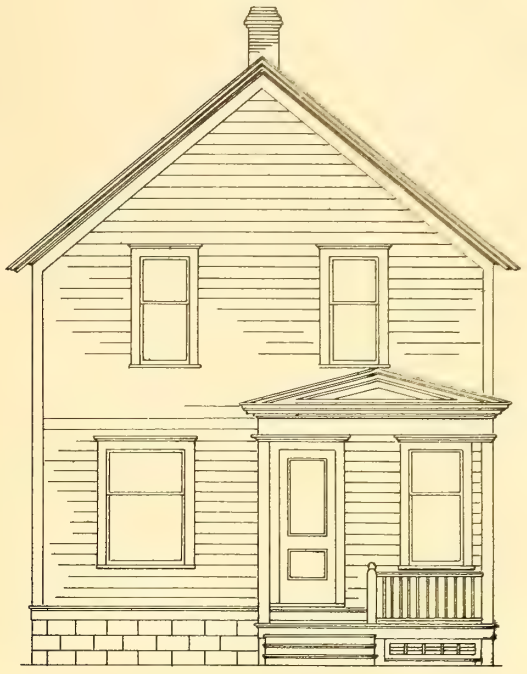


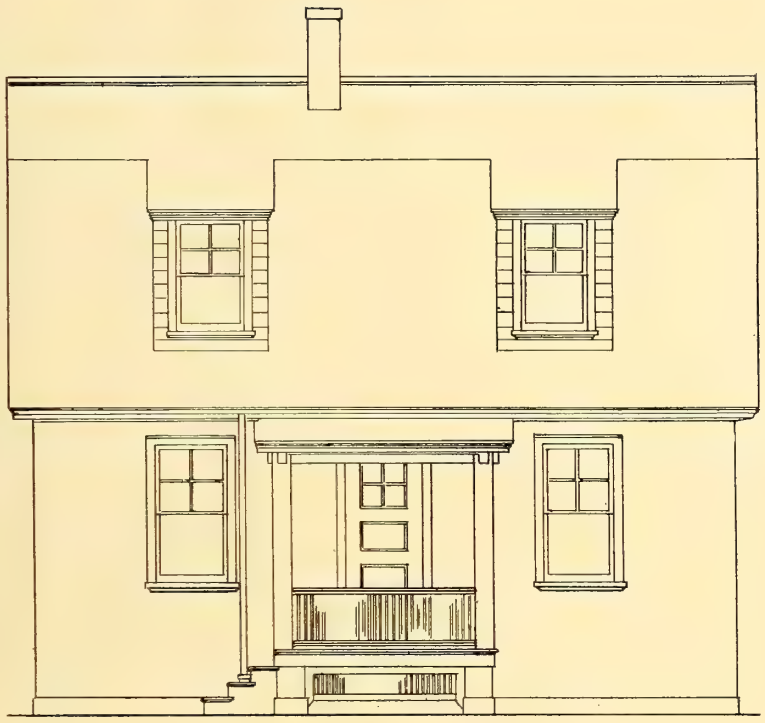


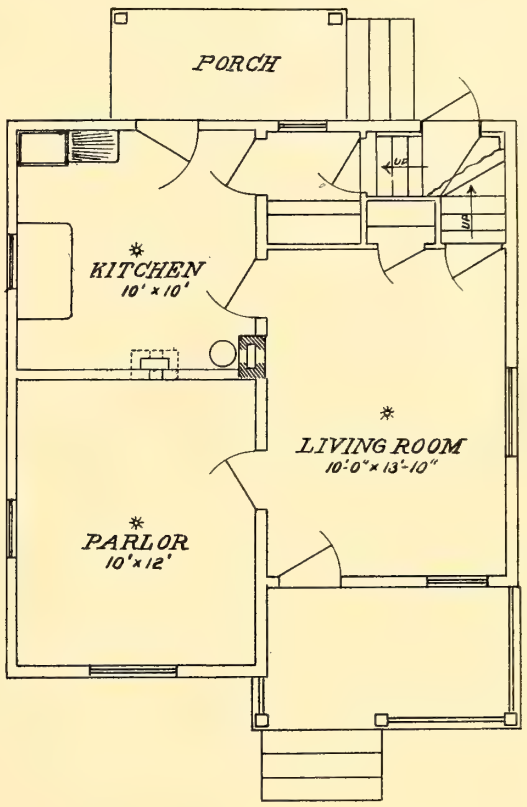
$1,500 design—First prize

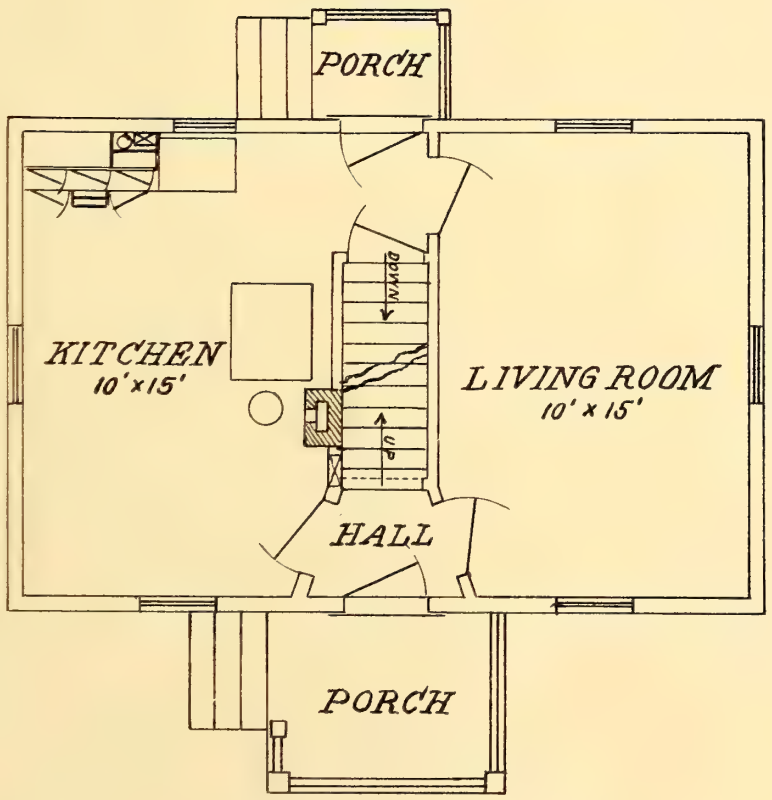
$1,000 design—First prize



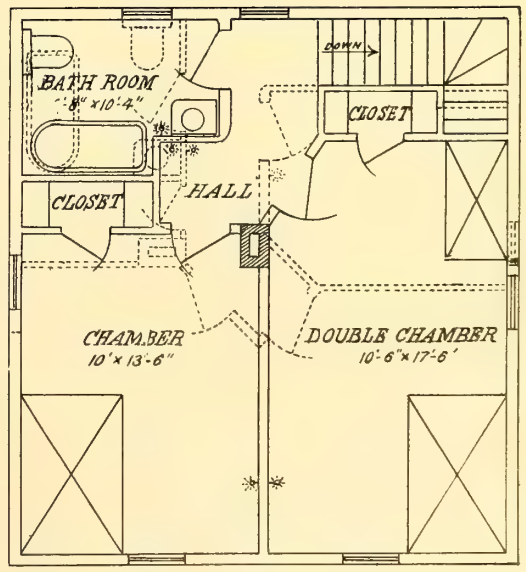








$1,250 design—first prize



$1,250 design—second prize

House of James E. Wheeler

Edgehill Road, New Haven, Connecticut

By Charles Chauncey

A HOUSE of excellent proportions of Colonial style is the one built for Mr. Wheeler at New Haven, Conn., and illustrated herewith in these pages. The site upon which it is built is a commanding one, and, as it is somewhat higher than the road in front it is kept quite close to the ground, in order to give it the elongated effect desired. It has a graceful porch at the center of the front, and a piazza at the south side of the house, which is reached from the living-room through French windows, and here the family life centers on a warm day.

The entrance-porch, with its paneled doorway and leaded-glass side-windows and the small-lighted bay window above, is quite the feature of the exterior.

The house is built, from the underpinning to the peak, of stucco, tinted a cream yellow and harmonizing well with the ivory-white trimmings and the moss-green stain of its shingle roof. While the Dutch Colonial is characteristic of the exterior, the interior has received the treatment of the old Colonial, not only in its detail, but also in its decorations and furnishings.

The hall is in the center of the house, and contains a handsome staircase of white-painted balusters and mahogany rail. The remainder of the trim is painted white, and the walls are covered with a wall-paper, in blue and white, of the pattern of a blue medallion on a white ground. An open fireplace, with red brick facings and hearth and a Colonial mantel, completes the features of the room, while the old grandfather's clock, mahogany table and Chippendale chair find a harmonizing setting built for them. To the left of the hall is the living-room, finished in a similar manner. It has a white-painted trim and a two-tone green wall covering; the brick fireplace has a Colonial mantel.

The paneled entrance door and upper window

Across the hall from the living-room is the dining-room, which has a white-painted trim. A chair-rail extends around the room, below which the wall space is covered with a dull yellow linen, and above which it is covered with a yellow and white wall-paper. A brick fireplace, with a Colonial mantel, together with the old Sheraton sideboard and the other corresponding furniture, make a very handsome room. The butler's pantry, connecting with the dining-room, is fitted with dressers, sink and cupboards. One door leads to the hall and the other to the kitchen, which is provided with all the best modern appointments.

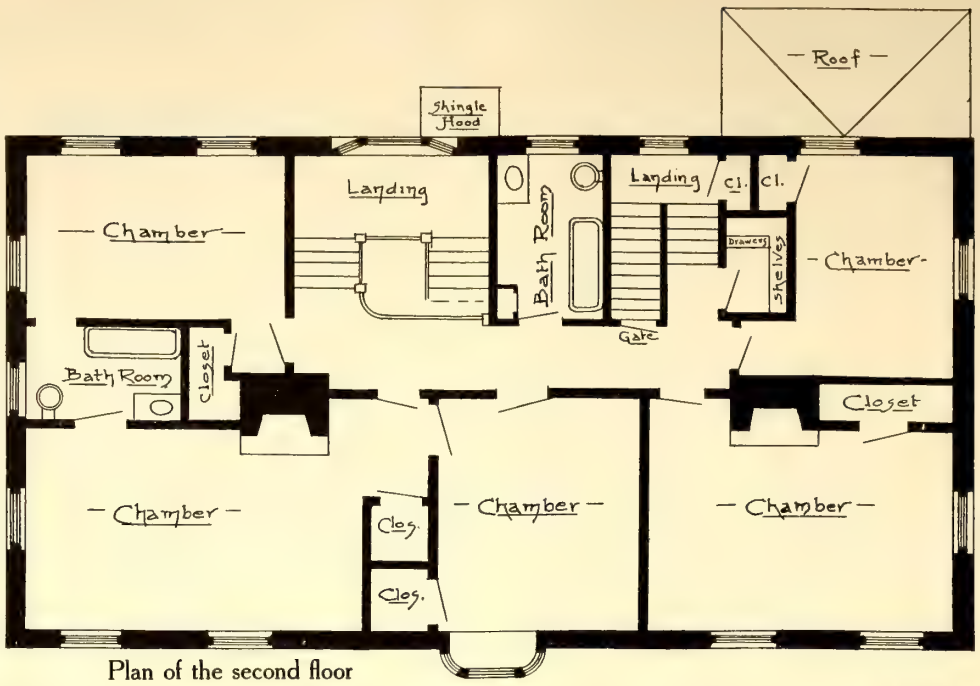
The second floor is divided into bedrooms and bath-

The staircase in the main hall

The dining-room is yellow and white

The living-room has white-painted trim and a two-tone green wall covering

rooms. Mrs. Wheeler's room is treated with white-painted trim, a wall covered with paper of large pink roses on a white ground, while Mr. Wheeler's room has also a white trim and a wall covering in green and white, with latticed effect. Miss Wheeler's room has a blue and white-striped wall-paper. There are two guests' rooms on this floor, one of which has a wall



Plan of the second floor

heating apparatus, fuel rooms. laundry and cold-storage.

Here is a house at once of commanding simplicity and penetrating charm. It is a goodly country house, ample in size, generous in its dimensions, hospitable in its character. Designed and erected to meet the specific needs of its owner, it has the universal characteristics of a good house.

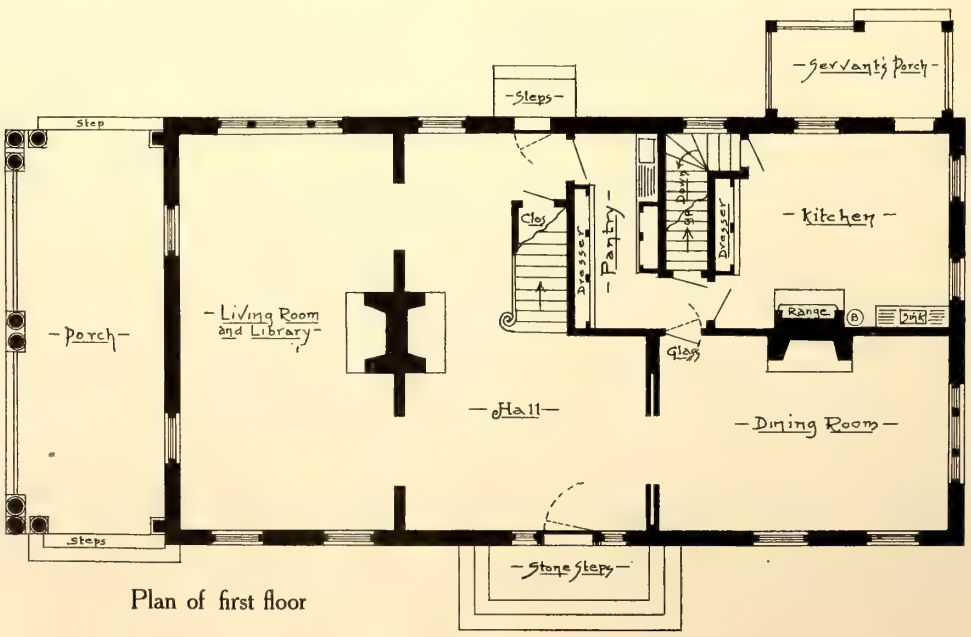
These may be briefly summed up. Notwithstanding its size, the plan is really thoroughly condensed; it is without waste and is economically arranged. The rooms are generous in size and are agreeably related to each other. The exterior expression is highly successful.

Mr. Mantle Fielding, of Philadelphia, Pa., was the architect of this interesting house.

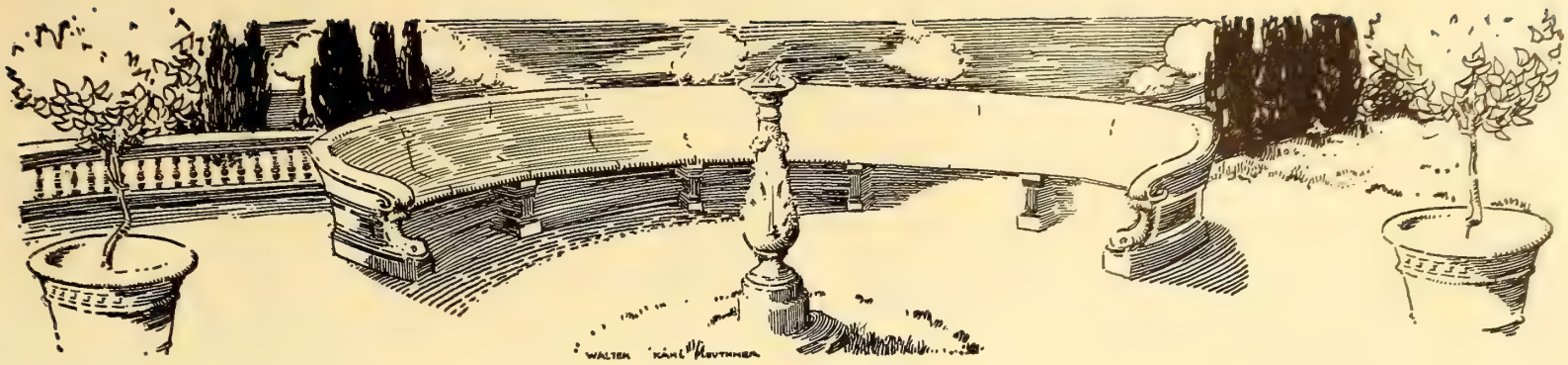
The house stands on rising ground but is itself low and long

covering in hollyhocks, and the other in yellow roses. The trim of both rooms is painted white. The bathrooms have yellow-painted walls throughout, and are furnished with porcelain fixtures and exposed nickel-plated plumbing.

Ample servants' quarters and storeroom are provided on the third floor, and the cellar under the entire building is devoted to the



Plan of first floor



Garden Notes

Algae in Pools and Ponds

THE green scum which grows in lakes and fountains in summer is a small plant known botanically as an alga. It is almost always seen in drinking-troughs and may appear in any body of water. It is unsightly and may make the water unpalatable though it is not in itself injurious.

Other varieties of alga give a peculiar fishy taste and odor to water from ponds and reservoirs, although the plant may not be visible to the eye.

Ground waters are more likely to produce a growth of algæ than surface waters.

It has been found that a weak solution of copper sulphate will kill all these algæ and prevent the growth of new ones and it has become a simple matter to keep the water clear.

One part of sulphate of copper to five million parts of water is usually sufficient to kill the algæ, but such a weak solution is entirely harmless to fish and to man. One could scarcely drink enough of such water in a day to get as much copper sulphate as there is in a can of peas.

The bacteria of disease, such as typhoid, are killed in three hours by a solution of one part of copper sulphate to one-hundred thousand parts of water, and such a strength does not injure aquatic plants but it will kill many fish.

One pound of copper sulphate in five hundred thousand gallons of water gives a strength of one in four million, which is good to start with. If this does not do the work, a stronger solution might be tried.

The best way to apply the copper sulphate is to put the required amount in a course bag and drag it back and forth through the water until it is all dissolved. In some cases, when the water contains a large amount of organic acids, it may be necessary to add enough lime to precipitate the copper. It is also extremely probable that the copper-sulphate treatment will kill the larvæ of mosquitoes. One treatment each season should be enough, but two weak doses will probably be better than one strong one.

Bulletin No. 64 of the Bureau of Plant Industry of U. S. Department of Agriculture should be consulted for further information on this subject.

Weed Killers

There are several good weed killers which can be used in keeping paths, gutters and gravel roads free from weeds.

They are especially useful on a large place because they save so much labor in hoeing and weeding. They can be applied either with the watering-pot or watering-cart or with the spraying apparatus. The cost should not exceed two cents a square yard even in small quantities. On a long road, of course, the cost should be much less.

One application every second year is said to be enough and one weed killer is claimed to be a dust preventive.

The weed killer can also be used to exterminate such objectionable things as poison-ivy, thistles, nettles, etc.

Weeds in the lawn must be cut out with a spud (a chisel-like tool on a long handle) or a drop of sulphuric acid can be put on the crown of each weed, killing it at once.

A Carpet and Edging Plant

The common wild cranberry, or small cranberry (*Oxycoccus macrocarpus*) is an erect dwarf evergreen which will grow in any garden soil as well as in its natural swamps and bogs.

It can be planted thickly and will soon make a solid carpet six or eight inches above the ground.

The flowers are pretty and the scarlet fruits which last through the winter are handsome. The leaves are bright green in summer; in winter, they are bronzed by the cold, resembling the color of *Azalea amoena.* It is useful as a carpet plant or as an edging for rhododendrons or other broad-leaved evergreens. At the edge of ponds or in the bog garden it finds its most congenial soil.

We are poorly provided with shrubby plants growing less than a foot high, but we have many situations where such plants could be used if they are thoroughly good and the cranberry is one of the best.

Turquoise Berry

"What is turquoise berry and where can I get it," asks a friend in Bedford. "It is a vine with blue beries which I saw in a Connecticut garden and the owner refused to tell me where she got it."

Turquoise Berry is just a very fancy name for *Ampelopsis heterophylla* (*Vitis heterophylla*) a Japanese vine which is much used to cover arbors, pergolas and trellises. It is not difficult to get since it has been in cultivation for many years and has been found growing wild at Lancaster, Pa. I think you will find it in any large nursery. It is an admirable vine for decorative purposes because of its handsome foliage and light blue berries which hang on for a long tme.

Planting Evergreens in August

Many experts consider August the most favorable time to transplant evergreen trees; the growth for the year being completed, the plant is then in a dormant condition and better able to stand the shock than in the spring when growth is active and the new shoots are likely to dry up.

August weather is a little against safe transportation and the trees planted at that time must be carefully watered when they are set out. August planting gives the trees time to grow new roots and to become thoroughly settled in the ground and established before the ground freezes. Planting in August or September will not do because there is not time for growth before frosts, and the trees will heave and be loosened in the ground, and, consequently, be dried out by the severe winter winds.

Spring planting, on the other hand, if it is done before the growth starts, has the advantage of cool weather and ground moistioned by spring rains.

Evergreens can be moved at any time of year if they are dug with a ball of earth.

Seeding Lawns

For the best results in lawn making all grass seed should be sown before Labor Day. There is then time with the help of autumn rains for the young grass to make a good growth before cold weather sets in. If the work can not be done by Labor Day it had better be put off until the following April for a good catch is unlikely after that.

Fall seeding is better than spring seeding because it gives more time to do the work, the rush being less in August than in April and because the grass gets a good start before frost and is ready to grow fast in the spring and the lawn will be much better than one which is sowed eight months later.

Celery

Celery can be planted at any time in July or August. It is much easier to buy the plants than to try to grow them from seed, which must be started early in the spring. It should be planted in rows three feet apart and the plants six inches apart in a row.

Thorough cultivation and a moist rich soil are absolutely necessary. Celery can not be grown in a dry soil no matter how well other plants may do in it. It is doubtful if it pays to grow celery in a small garden.

CORRESPONDENCE

The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

By Alice M. Kellogg

Author of "Home Furnishing: Practical and Artistic"

BOOKCASE AND CABINET

"WE have rather a peculiar need in our home," writes an Iowa subscriber, Mrs. G. F. G., "in the collecting tastes of our two sons. These boys share the same sleeping-room, where I have provided them with twin beds, and the large alcove they use together as a sitting-room. One boy is a great reader and manages to accumulate a good many books from time to time; the other is collecting minerals at a great rate. I have given them open shelves that hang on the wall, and now we are talking of building in some regular bookshelves, but this does not seem to me much of an improvement. I have seen some bookcases that are enlarged from time to time, and this idea is just what would suit us if the shape of the cases was attractive. Is there anything different that you could suggest?"

A cabinet for books and curiosities

A bookcase with glass doors and adjustable shelves would be the ideal way to meet the requirements of this family, and the kind that could be added to is certainly the most practical. In the illustration a simple design is shown that gives all of these arrangements with a tasteful outline that will always be acceptable. If minerals are to be shown through the glass, the leads may be omitted and each door have only a plain sheet of glass. This bookcase is thirty-one inches wide and may be added to at either end without altering its trim appearance.

A WINDOW PROBLEM

V. H. asks how to treat successfully a large triple window with a decided round to the top. "That is," she says, "the middle window is straight across the top, but the windows at the side are each rounded so that shades do not fit. What can be done with these hopeless windows?"

The ordinary upholsterer would soon solve this problem by cutting yards and yards of material into loops and festoons, edging them with thick fringe, lining and interlining every particle of the goods in wonderful fashion. As the room is on large lines the windows may be treated in a way to give straight effects instead of the circular. A net or lace will first need to be hung across the glass, and there are especial rods made that will fit the curve and permit the lace to be fastened to it. A long brass pole an inch and a half in diameter (as the space is twelve inches wide) may be fastened above the top of the casement, and at either end one width of fifty-inch drapery material may be hung to the floor, with a deep valance across the top. The end pieces will cover the curves of the casement and add dignity to the spaces of the room. A sateen lining will help to keep the material in shape without making the folds too heavy. Silk, armures or light-weight fabrics could be selected for this room in tones that harmonize with the walls. This scheme is more satisfying than heavy upholstery work.

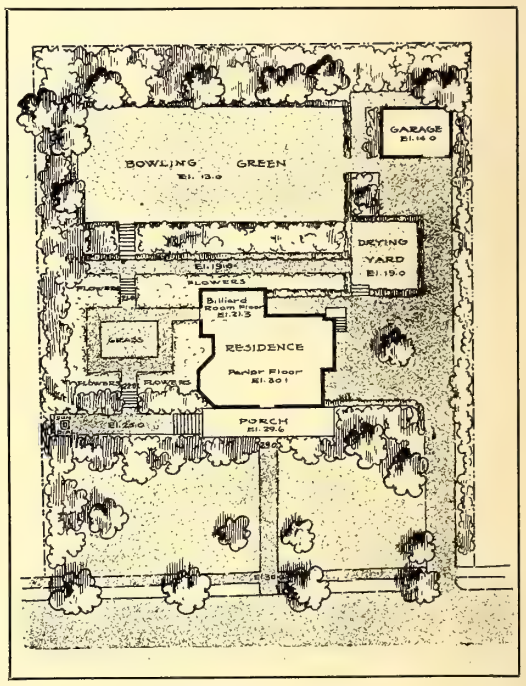
(*Continued on page xvi*)

Garden Work About the Home

By Charles Downing Lay

PLACING THE HOUSE ON A SIDE-HILL LOT

IN the May number of AMERICAN HOMES AND GARDENS we gave a brief discussion of the position a house should occupy on different corner lots. Judging by the letters which the editor of this department has received since that time, the subject has aroused much interest. Some of the queries will be answered at length in the September number. In the meantime, it may be interesting to consider the location of the house when the lot slopes rapidly from the street.



Arrangement of a side-hill lot

The plan shown herewith is of a lot 175 feet deep and 150 feet front. The back of the lot is fully thirty feet lower than the sidewalk in front.

The restrictions on the property made it necessary to place the house forty feet back from the property line and, for other reasons, it was thought best to place the house about on the middle of the lot.

Other houses on this low side of the street have been placed high; the ground floor two or three feet above the sidewalk level. This made much filling to raise the ground between the house and sidewalk, filling which was expensive to do and not justified by the results. In this case we decided that the first floor would be high enough if it was on the same level as the sidewalk, with the porch six inches lower and the front walk a foot lower. This makes one low step from the walk to the porch and a slope of one foot on the front walk from the sidewalk to the porch. The lawn, of course, slopes with the walk. Setting

the house low has improved its appearance, giving it a cosy homelike air which the stilted structures near by do not have, and it has saved much earth for important grading at the back of the house.

The advantage of a side hill is that the cellar is light and can be made useful. In this house we have a good sunny laundry under the kitchen, a laundry which is but little above the level of the drying-yard, so that there is no long flight of steps to carry clothes up and down.

Under the living-room there is a billiard-room with a door opening to the little flower garden south of the house. This garden is easily reached from the porch, and it is on the way to the bowling green. It is perfectly screened from the street by the flowering shrubs which are planted on the terrace banks and will therefore have much more of the garden spirit than a garden usually has on such a small lot.

The bowling green is shaded by large trees and screened from the neighbors' windows at the back by a thick mass of wich-hazel, viburnums and snow berries planted under the trees.

A small place divided as this is into many small compartments on different levels seems much larger than the same place would on level ground, and it has much more variety and interest.

It is an easy place to maintain because there are but four small grass plots, all nearly level, and no grass terrace banks which are hard to cut and are usually brown in summer.

Under the garage there is a cellar or basement on a level with the walk at the back. It is an excellent place for tools and for the storage of all the truck which must be kept on the place.

The shrubs are hardy things which once planted will need little care and will hold the steep banks successfully.

Wild roses, such as the *carolina, lucida, nitida, setigera, multiflora* and *wichuraiana,* forsythias, barberries, and, toward the front of the place, lilacs, weigelas, syringa and spiraeas.

In the garden there are only perennials and bulbs, mostly things which bloom either in spring or fall.

This plan, of course, could not be reversed for use on a lot sloping up from the street. The case is then quite different, as the light side of the cellar would be in front and could not be used for the laundry nor would it be nice to have the parlor on that floor.

We have arranged a lot sloping up from the street, and may describe it in a later issue if the letters from our readers indicate an interest in such a scheme. It is a much more difficult problem than the one which we have just described, but one which, with the cooperation of the architect, can be solved in quaint and convenient ways.

WILD PARSNIPS

A correspondent asks "if there is any truth in the popular idea that the garden parsnip in its wild state is poisonous and that the cultivated vegetable becomes poisonous if permitted to come up the second year?"

The common parsnip seems to be poisonous when it runs wild in wet meadows. It belongs to a family of poisonous plants and it may be, as you say, more poisonous the second year than the first. There is no distinction botanically between the wild parsnip and the garden parsnip.

VINES FOR THE PERGOLA

"What kind of a vine will entwine prettily around pergola beams, covering the beams but not growing thick enough to make a roof of foliage that would shut off light in the court?" W. F. W.

Akebia quinata seems to be the best vine for your purpose. Any vine will shut off the light, that's what they are grown on pergolas for, but the akebia has rather small delicate foliage and will twine around the beams without growing in dense masses as the honeysuckle does.

DYING NORWAY SPRUCES

W. Y. There is no way of saving young Norway spruce trees which were planted this spring, as I suppose yours were. They are undoubtedly dying because they were dry when planted, or because they were poorly planted, and have dried out since. It would be well to look them over and see that all are firm in the earth, and the ground not too dry.

It is possible also that they have been watered too much. A good soaking when they are planted, and another in July and August if there is a drought, should be enough for any tree. More would only be an injury.

If an evergreen tree once shows signs of poor health, if it is brown and the needles begin to fall and there is no new growth, it might as well be taken up and burned, for nothing can save it.

The Norway spruce commonly lasts only fifty or sixty years in this country. After that it dies or looks so thin and scraggly that we wish it would die, and are quite ready to cut it down and plant something less stiff and gloomy. The tree lacks picturesqueness and charm, and except when very young it does not compare in beauty with some of our native spruces or with the hemlock, which is an excellent tree of the same conical shape.

Cottage Designs

THESE books offer to architects, builders, homeseekers and investors by far the most complete collection of plans ever brought out, while the price is so low as to place them within the reach of all who have an interest in the building of homes. The designs are compiled with a view to representing all grades of cost, from the simplest types of cottages, as illustrated in the first series, to the comparatively elaborate structures reaching to $10,000 or more, in cost, treated in the fourth series, so that examples are given covering nearly every requirement, with respect to cost, in inexpensive homes.

¶ No. 1. Cottage Designs with Constructive Details

A series of twenty-five designs of cottages, most of which have been erected, ranging in cost from $600 to $1,500; together with details of interior and exterior finish, all drawn to convenient scale, and accompanied by brief specifications. Illustrated with 53 full-page plates of floor plans, elevations and details.

¶ No. 2. Low Cost Houses with Constructive Details

Embracing upward of twenty-five selected designs of cottages originally costing from $750 to $2,500, accompanied with elevations, floor plans and details of construction, all drawn to scale, together with brief descriptions and, in many instances, full specifications and detailed estimates of cost. Illustrated by 61 full-page plates of floor plans, elevations and details.

¶ No. 3. Modern Dwellings with Constructive Details

A selection of twenty designs of artistic suburban dwellings erected in various parts of the country, at costs ranging from $2,000 to $5,000; embracing floor plans, elevations and constructive details, showing interior and exterior finish, and drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions, from photographs of the completed structures, and 61 full-page plates, of floor plans, elevations and details.

¶ No. 4. Suburban Homes with Constructive Details

Comprising twenty selected designs of attractive suburban homes, ranging in cost from about $3,000 upward; embracing floor plans, elevations and constructive details, showing interior and exterior finish, all drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions from photographs of the completed structures, and 75 full-page plates of plans, elevations and details.

One Dollar Each, Postpaid
(SOLD SEPARATELY)

MUNN & CO.
Publishers of Scientific American
361 Broadway, New York

JUST PUBLISHED

TWO FAMILY & TWIN HOUSES

CONSISTING of a variety of designs contributed by leading architects in all parts of the country, showing the latest ideas in planning this class of dwellings in city, village and suburbs, together with very complete descriptions covering all the latest improvements in sanitation, heating, lighting, etc. In presenting this collection of designs the editor has had in mind the large demand for improved house accommodations on comparatively small lot areas, and has endeavored to collate designs from all parts of the country, representing the handling of the subject by practising architects in their efforts to meet the needs of their clients in this respect.

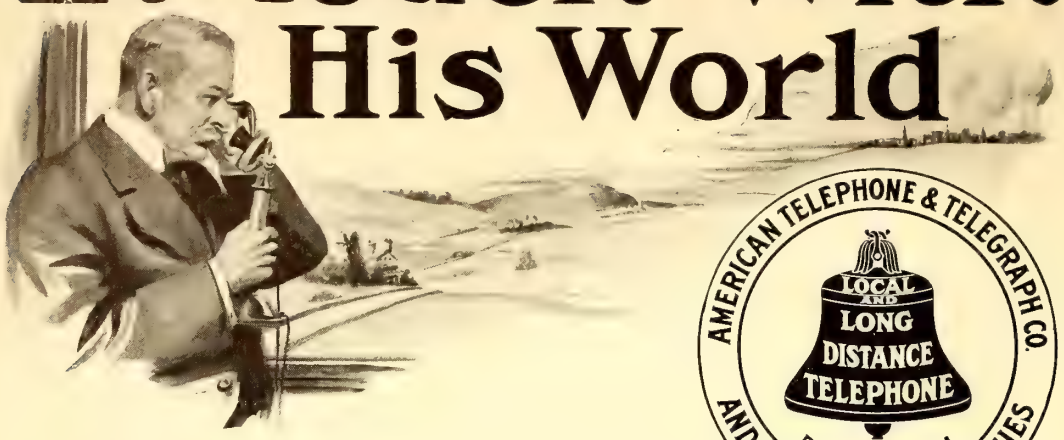
Two Detailed Specifications and Sixty Designs

Elaborately illustrated and accompanied by full descriptive text. Size, 8x10¼ inches, bound in illustrated board. Price, $2.00, Postpaid.

MUNN & CO., 361 Broadway, New York

For $5 *American Homes & Gardens* and *Scientific American* sent to one address for one year. REGULARLY $6

In Touch With His World



AMERICAN TELEPHONE & TELEGRAPH CO. AND ASSOCIATED COMPANIES — LOCAL AND LONG DISTANCE TELEPHONE — BELL SYSTEM

The railroad president to-day spends the greater portion of the summer at his country home renewing his energy. He keeps in touch with his railroad system over the telephone.

He may be one hundred miles or more away from headquarters, yet *his office* and the *principal business centers* of the country are *within talking distance.*

He is notified immediately when anything important occurs; his advice and direction are asked and given *over the telephone;* the machinery of the road goes on.

Each day, at the noon hour or in the early morning or late afternoon, he conducts his business over the long distance line.

He is in touch with his world.

Through the day he has been renewing his energy—sailing, driving, or playing golf—making himself *more fit for the busier season* and able at all times to handle a larger system and a larger volume of business than the railroad president of two decades ago.

This is simply an illustration *which applies to every busy man,* whether he be railroad president, merchant, manufacturer or professional man.

It shows the importance of universal service, which is the constant aim of the Associated Bell Companies—of *one system,* extending to every nook and corner of the United States, keeping *all* localities within speaking distance of one another.

Long Distance Bell Service is universal in two ways—in its extension to all localities and in its application to all human activities. Whatever your interests, it will advance them economically, certainly, constantly.

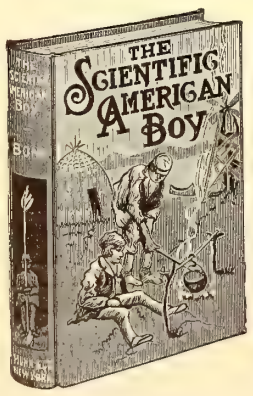
The American Telephone and Telegraph Company
And Associated Companies

One Policy, One System, Universal Service

The Scientific American Boy

By A. RUSSELL BOND

12mo. 320 Pages. 340 Illustrations. Price, $2.00, Postpaid.



¶ This is a story of outdoor boy life, suggesting a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. In each instance complete practical instructions are given for building the various articles. ¶ The needs of the boy camper are supplied by the directions for making tramping outfits, sleeping bags and tents; also such other shelters as tree houses, straw huts, log cabins and caves. ¶ The winter diversions include instructions for making six kinds of skate sails and eight kinds of snowshoes and skis, besides ice boats, scooters, sledges, toboggans and a peculiar Swedish contrivance called a "rennwolf." ¶ Among the more instructive subjects covered are surveying, wigwagging, heliographing and bridge-building, in which six different kinds of bridges, including a simple cantilever bridge, are described.

FOR SALE AT ALL BOOKSTORES

Our well-equipped Book Department is prepared to recommend & supply

MUNN & CO.

BOOKS

Relating to Architecture, Ceramics, Decoration, Rugs, Furniture, etc. :: ::

NEW YORK

Problems in Home Furnishing

(*Continued from page xiv*)

WALL-PAPERS FOR A RECTORY

"Will you advise me about choosing some pretty wall-papers for our new home? This is my husband's first charge and the rectory has been all renovated for us, with the privilege of selecting whatever wall-papers we wish. I am very desirous to have something that is tasteful yet up-to-date. The rug in the parlor is a French Wilton in small pattern and unaggressive colors—almost anything will go with it. The dining-room rug is a mixed blue and green. The study has a carpet in green and brown. The bedrooms are all to have new rugs. This point, also, I would like some help about."—D. E. J., Massachusetts.

There should be no difficulty in finding pretty wall-papers in this State, as there are several good factories at no very great distance. In a home of this kind the walls should be treated with quiet, two-toned papers, or the texture weaves that are now so much in vogue. In the parlor, a two-toned tan paper would be attractive. In the dining-room, a tan with a little green or blue in the figure. In the study, a silk-fiber in ivory or deep cream, or an oatmeal paper in buff color.

The walls of the bedroom may be planned with reference to the floor coverings, as these will show the largest proportion of color in the furnishings of rooms of this kind. There are charming, durable rugs made in Scotland of heavy wool that are especially adapted for this part of the house. As often advised in this department, the most sanitary way to treat the sleeping-room floor is to cover the spaces at the sides of the bed and at the foot with rugs that fit these spaces. This may also be done wih the Wilton rugs and the cotton ones woven in the old-fashioned way. Or regular carpeting may be made up into the right shapes. For one room a white and yellow broken stripe may have at the top under the picture-molding a cut-out border of yellow poppies. (This would, naturally, be the north or east chamber.) For a south bedroom a gray texture paper may have a narrow border of yellow roses. For the guest room a green-and-white leaf paper may be chosen if the woodwork is painted white. A pink rose border may be the decoration for a white stripe, a pink stripe or a gray, suggesting the dainty accompaniments of toilet articles with pink ribbons.

PICTURES FOR A BUNGALOW

"The walls of a bungalow we have rented for the season are of plain pine wood. We have only brought our clothes and table silver with us, and do not care to put up framed pictures. What would you suggest for a season's decoration to give interest to our rooms on days when we are compelled by the weather to remain indoors?"—E. C.

The English coaching and automobiling prints in bright, attractive colors are suitable for fastening against a wood wall surface, using the dull brass thumb-tacks at the corners of the pictures. There are also several series of nursery panels that are possible to utilize for children of a larger growth. Some of the picture friezes may be bought by the yard, and the ships and landscapes are often complete enough to detach in this way. If the regular colored prints seem too small they may be pasted to gray or brown paper to form a mat.

ASBURY PARK, N. J.

HOTEL WINDSOR

THIRD AVENUE AND HECK STREET

Accommodations for 150

OPEN JUNE 19

A refined patronage; superior table; moderate rates; near beach. Spend your vacation with us in the midst of all pastimes and pleasures. BOATING, FISHING, BATHING, ETC. This is the hotel you have been looking for. Write for particulars to

FRANK M. HANIGAN, Proprietor
FORMERLY OF HOTEL NORMANDIE, NEW YORK CITY
TELEPHONE CONNECTION

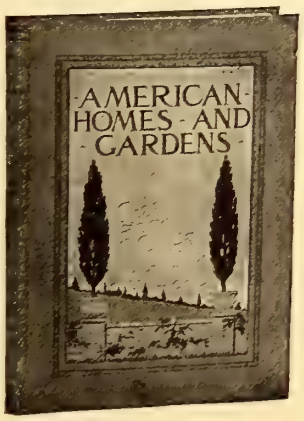
BOUND VOLUMES OF

American Homes and Gardens

1,100 ILLUSTRATIONS **1908** 494 PAGES PRICE, $5.00

American Homes and Gardens covers a wide scope; it deals with house building from the design and construction of modest cottages on tiny lots to the building of mansions on large estates. All degrees of gardening, from laying out a landscape to the planting of a window-box, are dealt with. Practical questions of water supply, of sanitation, or of the arrangement of the kitchen receive equal treatment with draping of windows or the arrangement of old china.

American Homes and Gardens is beautifully printed. The year's volume contains more than a thousand engravings, as full of detail and finish as actual photographs. They depict some of the old and historic mansions of America, and the most beautiful of gardens or of natural scenery. The following list of a few of the principal practical articles which appear in *American Homes and Gardens* during 1908, will show the wide choice of subject:



Notable American Homes (12 descriptive articles)—**The Rose as a Summer Bedder**—**Private Automobile Garages**—**Leaded Glass Windows**—**Etching on Copper and Brass**—**Problems in House Furnishing** (12 papers)—**Garden Work About the Home** (12 papers)—**Indoor Bulb Culture**—**Farming Experiment of a Woman**—**Rugs from the Scrap Bag**—**Water Parks**—**Old-Time Lights**—**Latches and Knockers**—**The Sun Room**—**Japanese Gardens in America**—**Sun-Dials**—**Heating and Lighting with Alcohol**—**Spring Houses Old and New**—**Planning a Country Home**—**The House Roof and Its Garden**—**The Plant and the Season**—**Garden Streams and Bridges**—**Stencil Work in Home Decoration**—**Bungalows** (12 articles)—**Scientific Poultry Breeding.**

¶ A limited number of volumes for 1907 are available. 480 pages. 1,050 illustrations. Price, $5.00. Volume for 1906, $5.00. Volume for 1905, $3.50.

MUNN & CO., Publishers, 361 Broadway, N.Y.

Cottage Designs

THESE books offer to architects, builders, homeseekers and investors by far the most complete collection of plans ever brought out, while the price is so low as to place them within the reach of all who have an interest in the building of homes. The designs are compiled with a view to representing all grades of cost, from the simplest types of cottages, as illustrated in the first series, to the comparatively elaborate structures reaching to $10,000 or more, in cost, treated in the fourth series, so that examples are given covering nearly every requirement, with respect to cost, in inexpensive homes.

No. 1. Cottage Designs with Constructive Details

A series of twenty-five designs of cottages, most of which have been erected, ranging in cost from $600 to $1,500; together with the details of interior and exterior finish, all drawn to convenient scale, and accompanied by brief specifications. Illustrated with 53 full-page plates of floor plans, elevations and details.

No. 2. Low Cost Houses with Constructive Details

Embracing upward of twenty-five selected designs of cottages originally costing from $750 to $2,500, accompanied with elevations, floor plans and details of construction, all drawn to scale, together with brief descriptions and, in many instances, full specifications and detailed estimates of cost. Illustrated by 61 full-page plates of floor plans, elevations and details.

No. 3. Modern Dwellings with Constructive Details

A selection of twenty designs of artistic suburban dwellings erected in various parts of the country, at costs ranging from $2,000 to $5,000; embracing floor plans, elevations and constructive details, showing interior and exterior finish, and drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions, from photographs of the completed structures, and 61 full-page plates of floor plans, elevations and details.

No. 4. Suburban Homes with Constructive Details

Comprising twenty selected designs of attractive suburban homes, ranging in cost from about $3,000 upward; embracing floor plans, elevations and constructive details, showing interior and exterior finish, all drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions from photographs of the completed structures, and 75 full-page plates of plans, elevations and details.

ONE DOLLAR EACH, POSTPAID
(Sold Separately)

MUNN & CO. *Publishers of* SCIENTIFIC AMERICAN
Three-Sixty-One Broadway, New York

Half a mile for twelve years

A customer writes us: *"I have much pleasure in giving expression to my unqualified appreciation of your Hot-Air Engine. I have used the same engine (6-inch Rider) for twelve years, and the fact that it pumps water 2500 feet is sufficiently indicative of its power."*

Our friend's experience is valuable as showing that no matter if the source of supply be at a distance, the **Hot-Air Pump** will deliver water just as satisfactorily in any home. His experience should also appeal to every dweller on high ground, who may be somewhat remote from a well, a spring, or running brook, for a Hot-Air Pump will bring his supply from the valley continuously and in abundance for a long period of years. "2500 feet for twelve years" means a great deal of water, a great deal of time, and a great deal of comfort. It also means that during a dozen years the owner has had no reason to change servants, so far as the pumping of his water supply is concerned. *He is satisfied.*

Remember that these pumps are not steam-engines, but machines of low power which cannot explode, operated solely by hot air, automatic in their action, requiring no skilled attention, so simple that any servant or farmer's boy can start and stop the little flame that gives them life. The cost of operation is almost nil, while the delivery of water is absolutely certain at all times and seasons.

Be sure that the name "REECO"-RIDER or "REECO"-ERICSSON appears upon the pump you purchase. This name protects you against worthless imitations. When so situated that you cannot personally inspect the pump before ordering, write to our nearest office (see list below) for the name of a reputable dealer in your locality who will sell you only the genuine pump. Over 40,000 are in use throughout the world to-day

Write for Catalogue E, and ask for reduced price-list.

RIDER-ERICSSON ENGINE CO.

(*Also builders of the new* **"Reeco" Electric** *Pump.*)

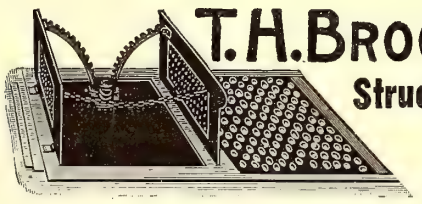
35 Warren Street, New York
239 Franklin Street, Boston
40 Dearborn Street, Chicago
40 North 7th Street, Philadelphia
234 West Craig Street, Montreal, P. Q.
22 Pitt Street, Sydney, N. S. W.

Hot-Air Pump

MANTELS AND ELECTRIC LIGHTING FIXTURES!

THE ELEGANCE, style and constructive excellence of our Mantels are such that they are now universally specified all over the country by the leading architects, and the most cultured home builders. We also carry a line of Gas and Electric Fixtures unique in their beauty and usefulness; and are manufacturers of Tiles, Grates, Wainscoating, Tile Floors, etc. Write us at once for handsome 75-page illustrated catalog, enclosing 10c. to help cover postage, sent free to those interested.

WOODWARD-EUBANKS MANTEL CO., Dept. D, Atlanta, Ga.



T. H. BROOKS & CO. CLEVELAND, O.

Structural & Ornamental Steel Work
FLOOR & SIDEWALK LIGHTS.
SEND FOR CATALOGUE.

Dixon's Silica Graphite Paint Lasts

And the reason why it lasts is because its pigments are inert. What have inert pigments to do with it? Our Booklet 106B will tell you.

JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.

Styles of Ornament

Exhibited in Designs and Arranged in Historical Order

A Handbook

for Architects, Designers, Artists, etc. Also for Schools, Libraries and Private Study

By ALEX. SPELTZ

EXHIBITING the entire system of Ornament in all its different styles. 400 Plates of Illustrations, containing about 5000 Figures. With illustrated descriptive text. *Descriptive Circular sent on request.*

One Volume, 8vo, 656 pages. Bound in Cloth, **$5.00**

MUNN & CO., 361 BROADWAY, NEW YORK CITY

OUR FUTURE FRUIT GARDENS

By E. P. Powell

NOTWITHSTANDING the extraordinary development of better fruits, it has been largely confined to the rose family (Rosaceæ). Apples are rapidly improving in quality, and we have got pretty close to perfection in Stayman's Winesap, Winterstein, Delicious, Walper Pease, McIntosh Red, Jonathan, Grimes' Golden and King David This is not intended for a complete list of ideal apples, but it will be hard to surpass those named. Then, for older sorts that can not be displaced, we have Northern Spy, Baldwin, Spitzenburg and Rhode Island Greening. If the trees were not brittle and subject to winter killing, perhaps the King would stand at the very head of the list. At any rate, if one wishes to see the progress made in apples, note how the Fameuse or Snow has given us half a dozen children of such high quality as to displace the parents. While the Winesap family is even more prolific of sterling new sorts.

Pears are also practically a closed up chapter in evolution. We shall hardly get anything finer than Sheldon, Anjou, Bosc, Seckel and Flemish Beauty. You might double this list of ideal pears. The fight now remains with insects and fungus—in the pear orchard mainly with fungus. The plum chapter was very incomplete until Mr. Burbank took hold and gave us his remarkable list of cross-breeds; lifting our native plums our of their worthlessness into high rank. We still have something to do, however, in creating a Green Gage as big as a Magnum Bonum, while retaining the vitality of the Green Gage tree. The Bavay Green Gage is a long stride in this direction. I look to see a big family of these gages covering the whole season. In quality it is the ideal plum, impossible to surpass. The Bleecker is everybody's plum, offering bushels to the poorest man, on the poorest soil, in the smallest yard. It is not quite ideal in quality, but comes very near being one of the finished-up fruits. In the cherry list we need a good group of perfectly hardy sweet cherries, as hardy as the Morellos and as resistant to insects.

This whole Rosaceæ family of fruits is still open for evolution. In addition to those named we have the quince, as yet only fit for cooking—although Mr. Burbank claims to have given us, in the Pineapple Quince, a good start in the direction of a dessert fruit. If we can carry the aroma of the quince into varieties that are tender and digestible, and then multiply the varieties, as we have the apples and pears, we shall have done something worth the while. I am growing Mr. Burbank's new variety, but do not feel sure of its edible qualities; there certainly is a big job ahead. The quince is becoming an orchard fruit in some sections of the South, and of considerable importance. In that section there are more chances for wildings and seedlings—which we may look for.

I am glad to report that a great deal is being done in the way of improving our native wild persimmon. Mr. Samuel Miller, who was secretary of the Missouri Horticultural Society, was the first to select varieties and test them. He secured some half dozen of extra quality, most of which I tested in New York State, on native stock, and found entirely hardy as far north as Utica. The best of these, which he named the Josephine, is now sold by Mr. Munson, of Denison, Texas, as the Honey. It is a splendid fruit, preferred by many to the best Japanese sorts. What we want now is to reduce the number and size of the seeds. There is no reason why we can not make the American persimmon as

The Charm of a Formal Garden

is the charm of white stone among green lawns, trees and vines, in the form of sun dials, pergolas, fountains, steps, walks, seats and arbors.

The formal gardens of Italy were adorned with carved marble. It is possible for you to reproduce the effects of such gardens at a small expense by using Atlas Cement Concrete, a mixture of fine sand with

ATLAS PORTLAND CEMENT

The one point you should never forget is that the success of concrete construction depends upon the quality of cement used.

"Portland" does not mean quality. It is merely the name of a kind of cement. "Atlas" is the brand of Portland Cement that makes concrete construction successful.

"Atlas" is the standard in Portland Cements. It is always pure, always uniform and is made in one grade only—the best—and the same for everybody. The United States Government has purchased 4,500,000 barrels of Atlas Portland Cement for the Panama Canal. To get the best results you must specify Atlas Portland Cement. Write for

"Concrete Construction about the Home and on the Farm" (Free)
"Concrete Country Residences" (25 cents)
"Concrete Cottages" (Free)
"Reinforced Concrete in Factory Construction" (10 cents) and others

If your dealer cannot supply you with Atlas, write to

THE ATLAS PORTLAND CEMENT COMPANY, DEPT. 10, 30 BROAD ST., NEW YORK

Largest output of any cement company in the world. Over 40,000 barrels per day

The Best of a Nation's Wheat—
The Best of a Nation's Bakeries—
The Best of a Nation's Bakers—
The result—

Uneeda Biscuit

The BEST Soda Cracker

From start to finish—from the granary to the moisture proof package—the one thought in the production of Uneeda Biscuit is "BEST." That's why you enjoy them so

5¢

NATIONAL BISCUIT COMPANY

JUST PUBLISHED

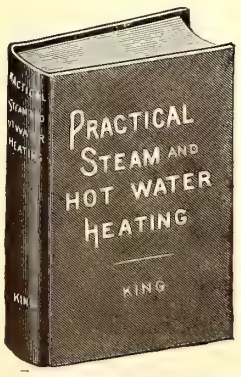
Practical Steam and Hot Water Heating and Ventilation

JUST PUBLISHED

By ALFRED G. KING

402 Pages. Containing 304 Illustrations

Price $3.00



An original and exhaustive treatise, prepared for the use of all engaged in the business of Steam, Hot Water Heating and Ventilation

THE standard and latest book published. Tells how to get heating contracts, how to install heating and ventilating apparatus. Describes all of the principal systems of steam, hot water, vacuum, vapor and vacuum-vapor heating, together with the new accellerated systems of hot water circulation, including chapters on up-to-date methods of ventilation; fan or blower system of heating and ventilation; rules and data for estimating radiation and cost, and such other tables and information as make it an indispensable work for heating contractors, journeymen steam fitters, steam fitters' apprentices, architects and builders.

This work represents the best practice of the present day and is exhaustive in text, diagrams and illustrations.

CONTAINING CHAPTERS ON I. Introduction. II. Heat. III. Evolution of Artificial Heating Apparatus. IV. Boiler Surface and Settings. V. The Chimney Flue. VI. Pipe and Fittings. VII. Valves, Various Kinds. VIII. Forms of Radiating Surfaces. IX. Locating of Radiating Surfaces. X. Estimating Radiation. XI. Steam-Heating Apparatus. XII. Exhaust-Steam Heating. XIII. Hot-Water Heating. XIV. Pressure Systems of Hot-Water Work. XV. Hot-Water Appliances. XVI. Greenhouse Heating. XVII. Vacuum Vapor and Vacuum Exhaust Heating. XVIII. Miscellaneous Heating. XIX. Radiator and Pipe Connections. XX. Ventilation. XXI. Mechanical Ventilation and Hot-Blast Heating. XXII. Steam Appliances XXIII. District Heating. XXIV. Pipe and Boiler Covering. XXV. Temperature Regulation and Heat Control. XXVI. Business Methods. XXVII. Miscellaneous. XXVIII. Rules, Tables and Useful Information.

Valuable Data and Tables Used for Estimating, Installing and Testing of Steam and Hot-Water and Ventilating Apparatus are Given

MUNN & COMPANY, PUBLISHERS, 361 BROADWAY, NEW YORK CITY

American Homes and Gardens *and* Scientific American will be sent to one address for **$5.00**

Regular Price, $6.00

large and as rich and as marketable as the Japanese.

I have myself quite as much hope of the American pawpaw, a thoroughly hardy fruit, to be found in the lowlands of Ohio, Indiana and Michigan. This little tree is adaptable to our upland soils if we will mulch it well, and see that it is supplied with sufficient water in dry spells. The fruit is about half the size of a banana, and a good sort is equal to the best clotted cream. Here again we have to eliminate large seeds, and it can be done. It is very probable that there are extra choice persimmons and pawpaws in the hands of private parties, and not yet reported to experiment stations or the Washington Department of Agriculture—as all such things should be. It is almost a criminal affair to let choice fruits be lost to the public.

It is a curious fact that while we have sweet apples and sour apples, we have in the orange stock never known of anything but more or less sour oranges. I have lately come upon a seedling which is absolutely sweet, without a trace of citric acid. The flavor is high, the orange heavy and rind sufficiently thin, and it seems quite probable that we are to have a race of sweet oranges developed. A seedling lemon, started in Baltimore, I think, grows a fruit weighing from one to two pounds each. This fruit will probably displace the old lemon, although I am not quite sure that the size will not prove too large for the market. The quality of this lemon is superb, and a tree hanging full of the fruit is equal to a grapefruit tree in beauty.

The lime has been known in market as an insignificant fruit in size, but now we have a lime about three times the size of the old one, with a thin skin and most delicious quality. This lime ought to displace all others very quickly, as it will grow on all sorts of citrus stock. Another semi-tropical fruit of which we expect great improvement is the loquat. It is already doubling in size. It is pear-shaped with the flavor of a cherry. It probably will not become a market fruit to any extent in the North, because easily bruised. It ought to be shipped in crates like currants and berries.

There is a lot of work still to be done in the berry fields. As long as we have had the red raspberry under cultivation we have not yet secured a thoroughly good all-round market berry. The Loudon would be about the thing if it were not so quick to melt down. It serves well as a home fruit. The purple berries, especially the Shaffer, do not quite please the popular taste, although they are pretty nearly ideal in quality and size. The Golden Queen is a little better than Cuthbert which is red, but off in color. It does not kill back quite so readly in winter as its mate. My own Silver Queen is hardier and every way finer, if the canes are tall enough. We will have to see about that.

At any rate, we need a lot of thorough work in the way of improving our red raspberries. It will have to be based on the Cuthbert, as all in all the nearest to an ideal. We must, however, have a hardier berry, and we can improve the flavor. The black raspberry is already brought to perfection in the Cumberland, and two or three more varieties. The blackberry is also about right for garden work in King Philip and Eldorado. I am not sure that we have any better strawberry for general cultivation than Wm. Belt, and yet the Wm. Belt has been grown for about fifteen years. "Better" sorts are sent out each year, but for a combination of prolific bearing, good size, fine flavor and good shape we have hardly the superior of that old sort. It is a grand field, however, for trial. It looks as if we should be dissatisfied without we could

have something new to stir our enthusiasm every year.

The edible cacti need not be discussed as a novelty, for they are not; but we should bear in mind that our noblest fruits, as well as grains, have been developed from the most insignificant wild stuff. Our apples and our oranges came out of hedge rows, and our pears were hardly edible uncooked one hundred years ago. There are remaining scores of fruits that will probably be worked up into something valuable, and some of them will probably be of quite as much use as those we have secured from the Rosaceæ family. Every land-owner should make it a part of his field work and garden work to help on evolution. The Government is at present doing some very admirable work in the way of introducing new fruits from foreign countries, although its efforts in the way of improving citrus fruits have not yet proved to be a remarkable success. The citranges are of some value, but hardly more useful than wild oranges. The Department has, however, waked up a general enthusiasm, and is doing what will ultimate in magnificent progress.

A PRETTY KITCHEN GARDEN

THE accompanying plan for a garden sixty feet square is equally suitable for a large place or a small one, and may be the basis for multiplication or division as circumstances demand. The spacing is planned with reference to having the cultivation done with a hoe or hand cultivator, and no space is allowed for weeds. There will be enough among the plants without allowing room for them between the rows. It is most economical both in space and in labor to plant in rows, all running the same way, the direction being determined by the location of the plot.

We will suppose that a garden sixty feet square is to be started in the spring. We begin by laying a foundation for years to come by starting an asparagus bed. If the plants are two years old, we may hope to cut them next spring, and thereafter indefinitely, provided the bed is kept clear of weeds and well manured every autumn. Eight feet in width is not too much space to devote to this investment. The Colossal is a standard variety, and may be bought of any good nursery man who deals in asparagus. In this space six rows may be set, with the plants one and one half feet apart. Be sure to set the roots into the deep trench, which should be dug for them. Two hundred and forty plants will be ample.

At each of the outer corners of this bed a small triangular space may be taken for flowers; in one plant a dozen sunflower seeds; in the others, as many hollyhocks. The sunflowers will overtop everything in the garden —except, perhaps, the corn—and blossom this year. The hollyhocks will grow luxuriantly, but will not blossom until next year. In September you should transplant all but about three, and they will be very effective next year at intervals along the whole outer edge of the asparagus bed, blossoming in the latitude of New York from the first to the middle of July. In the spaces between these hollyhocks nothing is so pretty as yellow chrysanthemums. They can be set in the spring when the work begins, and will be coming into their fullest beauty just as the frost has laid everything else low.

This asparagus bed this year is also a good place for a series of raddish and lettuce crops sowed between the asparagus rows. The first may be sowed just as early as the ground can be worked, before it is necessary or, indeed, safe to set the asparagus. The little lettuce plants, when about four inches high, should be transplanted so as to have room for root de-

Vacation air all Winter

You spend much time and money all Summer seeking to keep yourself and family in the outside air. The air of Winter is, if anything, purer. The reason many a family does not get the benefit of pure, fresh air all the year round is because they stick to stuffy, ashy, gas-laden, old-fashioned heating methods.

AMERICAN RADIATORS & IDEAL BOILERS warm the air as fast as it comes in and just where it comes in. The Hot Water or the Low-Pressure Steam is gently but surely piped to the AMERICAN Radiators that warm the cold air as it flows under, through, over and around them. The force or direction of the wind, or intensity of the cold, does not matter. There is Summer warmth throughout the whole house on the most tempestuous of Winter days.

IDEAL Boilers do not merely "burn coal"—they develop its **full** heating energy—and distribute **all** the available heat of the fuel through the AMERICAN Radiators to the rooms to be warmed.

A No. 3-22 IDEAL Boiler and 600 ft. of 38-in. AMERICAN Radiators, costing the owner **$255**, were used to Hot-Water heat this cottage.

A No. 22 IDEAL Boiler and 240 ft. of 38-in. AMERICAN Radiators, costing the owner **$115**, were used to Hot-Water heat this cottage.

At these prices the goods can be bought of any reputable, competent Fitter. This did not include cost of labor, pipe, valves, freight, etc., which installation is extra and varies according to climatic and other conditions.

Whether your cottage, house, store, building, church, etc., is OLD or new, farm or city, do not delay investigating this best **investment** feature of any building. Saves fuel, labor, repairs — gives greatest comfort, protects the health and insures household cleanliness, safety and durability. Just the season to get the services of the most skillful fitters—now, **before** Winter; not **then,** when it's here.

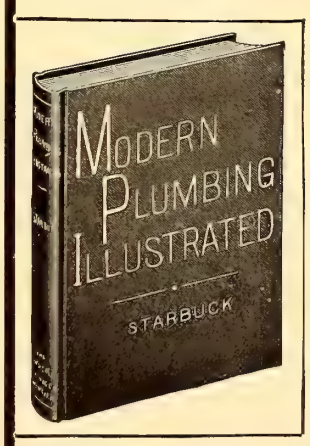
You will enjoy reading our free book, which tells lots of things about heating economies it will pay you well to know. Write for it to-day, describing kind of building you wish to heat.

Showrooms in all large cities

AMERICAN RADIATOR COMPANY

Write Dept. 6 CHICAGO

Modern Plumbing Illustrated



By R. M. STARBUCK

400 (10¼ x 7½) PAGES

55 FULL PAGES OF ENGRAVINGS

PRICE, $4.00

¶ A comprehensive and up-to-date work illustrating and describing the Drainage and Ventilation of Dwellings, Apartments and Public Buildings, etc. The very latest and most approved methods in all branches of Sanitary Installation are given.

¶ Many of the subjects treated in the text and illustrated follow in the next column.

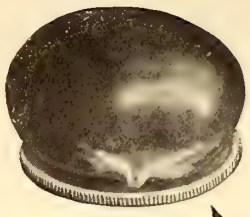
MUNN & COMPANY, *Publishers*

SCIENTIFIC AMERICAN OFFICE, 363 BROADWAY, NEW YORK

SOME OF THE SUBJECTS TREATED

Connections, sizes and all working data for Plumbing Fixtures and Groups of Fixtures
Traps — Venting
Connecting and Supporting of Soil Pipe
House Trap and Fresh-Air Inlet
Floor and Yard Drains, etc.
Rain Leaders
Sub-soil Drainage
Floor Connections
Roof Connections
Local Venting
Bath Room Connections [etc.
Automatic Flushing for Factories, School Houses,
Use of Flushing Valves
Modern Fixtures for Public Toilet Rooms
Durham System
Plumbing Construction without use of Lead
Automatic Sewage Lift — Sump Tank
Disposal of Sewage of Underground Floors of High Buildings
Country Plumbing
Cesspools
The Electrolysis of Underground Pipes
Septic Tanks and Sewage Siphons
Pneumatic Water Supply, Rams, etc.
Examples of Poor Practice
Roughing — Testing
Continuous Venting for all classes of Work
Circuit and Loop Venting
Use of Special Waste and Vent Fittings
Cellar Work
House Drain— House Sewer — Sewer Connections
Plumbing for Cottage House
Plumbing for Residence
Plumbing for Two-Flat House
Plumbing for Apartment Houses
Plumbing for Office Building
Plumbing for Public Toilet Rooms
Plumbing for Bath Establishment
Plumbing for Engine Houses
Plumbing for Stables
Plumbing for Factories
Plumbing for School Houses, etc. [by Electricity
Thawing of Underground Mains and Service Pipes

Grow Chestnuts Like This For Profit



Covers a 50c. piece.

Whether you have one acre, or a hundred, you can get bigger profits per acre from Sober Paragon Chestnuts than from any other crop you could plant.

Hardy, rapid, symmetrical growth; luxuriant foliage; spreading boughs; clean trunk; stateliness; immunity from parasitic blight—

These qualities have been combined and developed by science to a degree that closely borders perfection, in the new

SOBER PARAGON

Mammoth, Sweet Chestnut

A single crop, Fall of 1908, brought $30,000 (5,000 bushels @ $6.00 a bushel). And that orchard was only ***7 years old.***

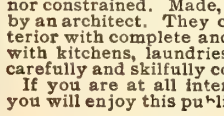
The only large ***sweet*** chestnut in the world.

United States Pomologist, G. B. Brackett, says "The Sober Paragon comes the nearest in quality to the native chestnut of any of the cultivated varieties that I have examined. It is of large size, fine appearance and excellent flavor."

The Sober Paragon bears the second year—a 5-year old tree grew 500 burrs in 1 year. The nuts average 1 to 2 inches in diameter—and 3 to 5 nuts in a burr.

We offer 3 to 5-foot grafted trees for delivery Fall, 1909, and Spring, 1910. ***Orders being booked now.***

Testimony from growers, commission merchants, Forestry Experts, etc, given in our free booklet, together with prices and particulars.



We own exclusive control of the Sober Paragon. This copyrighted metal seal is attached to every genuine tree, when shipped.

Write today for the booklet. Address "Desk D,"

GLEN BROS, Nursery, Sole Agents,
ROCHESTER, N. Y.

MENNEN'S
BORATED TALCUM
TOILET POWDER

"BABY'S BEST FRIEND"

and Mamma's greatest comfort. **Mennen's relieves** and **prevents Prickly Heat, Chafing and Sunburn.** For your **protection** the **genuine** is put up in **non-refillable** boxes—the **"Box that Lox,"** with **Mennen's** face on top. Sold everywhere or by mail, 25c.—**Sample Free.** Guaranteed by the Gerhard Mennen Chemical Co., under the Food and Drugs Act, June 30, 1906. Serial No. 1542.

Try **Mennen's** Violet (Borated) Talcum Toilet Powder—
It has the scent of Fresh-cut Parma Violets. **Sample Free**

GERHARD MENNEN CO., Newark, N. J.

Mennen's Borated Skin Soap [blue wrapper] { *No Samples*
Specially prepared for the nursery.

Mennen's Sen Yang Toilet Powder, Oriental Odor—Sold only at Stores

Colonial Houses
FOR MODERN HOMES

A COLLECTION of designs of houses with Colonial (Georgian) details, but arranged with modern comforts and the completeness of the twentieth century.

Written & Illustrated by E. S. CHILD, *Architect*

They show large, correctly drawn perspectives, full floor plans, and complete descriptions, with estimates of cost. The designs are **new, original, unique, consistent,** but not stiff nor constrained. Made, not by an artist, but by an architect. They combine beauty of exterior with complete and convenient interiors, with kitchens, laundries, pantries and closets carefully and skilfully considered,

If you are at all interested in the subject, you will enjoy this publication.

Price, postpaid, $2.00

MUNN & CO., 361 Broadway, NEW YORK

velopment, and placed ten inches apart. Nitrate of soda carefully mixed with the soil, but not too freely, will improve the lettuce. The "Big Boston" is a variety that will head out doors. The favorite "Boston" can only be grown under glass. By sowing and transplanting at least three fairly good crops of lettuce should be grown in the course of the season.

Next year, after the asparagus has been cut, there will be room to raise at least one crop of lettuce before the tops of the asparagus are so tall as to shade it. Meantime, as it grows the asparagus makes this side of the garden prettier and prettier all summer, until it is brightened by its red berries.

A foot from the inner edge of the asparagus bed may be set a row of thirty sweet pepper plants a foot apart, and on the same line, eighteen inches apart, a row of egg plants. Both of these kinds of plants are of singular beauty and interest after they begin to blossom. Next may come a row of white or of pink and white alyssum, forming the border of a path two feet wide.

The next six and a half feet in width, for a distance of forty feet, are devoted to four rows of onions; in the remaining twenty feet there is room for about twelve hills of cucumbers, in two rows, from four to eight seeds in a hill.

Between the hills of cucumbers African marigolds may be sowed, a dozen seeds or so, in a line. They will be ready to blossom about the time the cucumbers are over.

In the next space, three feet wide, three rows of beets may be sowed, rather thickly so that about every other plant may be taken out while the leaves are still tender, to be used, tops and all, for the most delicious "greens" the garden will afford. If, in sowing the beet seed, you put in two-inch spaces, at intervals of about a foot and a half, aster seeds (purple in the row next the onions and cucumbers, white in the next, and pink in the third), you will have beautiful rank plants to make the spaces where beets have been taken out less noticeable. Where the asters are crowded you may transplant some into such spaces with safety before the middle of July. In September these rows of aster blossoms will be your delight.

The next section, five feet wide, may well be divided so that the first ten feet may contain four hills of summer squash, an ample number, and the remaining fifty feet may be set with tomato plants. It is important that the cucumbers and squash vines be thus separated, as they are likely to be invaded by the same beetle. Forty tomato plants—not safely set in this latitude before May 20—should be put out in two rows, alternating a space and a plant. I recommend people who have no hotbed to plant their tomato seeds in a shallow box in a sunny window in March. Thus you may be sure to have plants of a good variety. Set out only the strongest plants. I have tried several kinds, and find none so satisfactory as the "Trucker's Favorite." They begin to ripen before some given in the seed catalogues as earlier varieties, and are delicious in flavor and very prolific. Tomatoes begin to ripen at the center and should be picked before the outside is in its deepest color. Never lay them in the sun to ripen. They need the dark.

Beyond the tomatoes and squash vines our plan gives a foot and a half of space for one row partly of carrots and partly of turnips or parsnips. The plants make a pretty border for the four-foot-wide path through the center of the garden. In the middle of this path I suggest a bed about eight feet long, devoted to scarlet geraniums or verbenas. Either of these will blossom all summer and make a bright spot in sight from every path of the plot.

The other border of this wide path may well be parsley.

Next to this, in a space eighteen inches wide, a row of cauliflowers may be set. When the heads are well started the large leaves should be tied over them with raffia or a strip of cloth half an inch wide (not string), and thus protected they will whiten to perfection. In the adajcent foot I suggest a row either of salvias or nasturtiums of a dwarf variety. The latter have the advantage of blossoming earlier, of furnishing in their seeds a toothsome addition to any pickles, and in their leaves a spice to any salad.

In the next space of four and a half feet there is room for two rows of spinach and one of cabbage. Then may come in a three-foot space, two rows of peas. Arrange them so that the brush upon which they are supported is between the rows. I have not succeeded with the varieties of peas left unsupported, and

8	feet	Hollyhocks ..... Chrysanthemums ..... Sunflowers ..... 6 Rows Asparagus .... Lettuce Between .....
1	foot	.....Sweet Peppers .....Egg Plants.....
1	foot	.....Sweet Alyssum.....
2	feet	PATH
6½	feet	Four Rows Onions.....Twenty Feet to Cucumbers, Marigolds Between Forty Feet Long Twelve Hills
3	feet	Three Rows Beets .....Asters at Intervals of Eighteen Inches
5	feet	Ten Feet Space / Four Hills / Summer Squash — TWO ROWS TOMATOES
1½	feet	Carrots ..... Turnips or Parsnips
4	feet	PATH — Geraniums or Verbenas — PATH
1	foot	.....Parsley..... Parsley.....
1½	feet	.....Cauliflower.....
1	foot	..... Salvias or Nasturtiums .....
4½	feet	.....One Row Spinach..... ..... Two Rows Cabbage .....
3	feet	..... Two Rows Peas—Brush Between .....
2	feet	..... One Row Beans and Mignonette .....
2	feet	..... One Row Beans—Later .....
6	feet	.....Four Rows Peas—Two Plantings.....
7	feet	..... Three Rows in Three Plantings of Sweet Corn ....Winter Squash..... .....Dahlias..... Dahlias.....

You choose the colors—
Thread & Thrum Rugs
we'll make the rug.

YOUR own individual rug, different from all other rugs, and in a high-class wool fabric adapted to your own decorations. If the rugs in stock colors do not suit your requirements we will make one that will, either plain, self-tone or contrast. All sizes up to twelve feet wide, any length. Seamless, wool weft, reversible, heavy and durable. Sold by best shops or write for color line and price list to ARNOLD, CONSTABLE & CO., NEW YORK.

THREAD & THRUM WORKSHOP, AUBURN, N. Y.

WIZARD BRAND MANURES

Cattle Manure in Bags *Shredded or Pulverized*

Best and safest manure for florists and greenhouse use, absolutely pure, no waste, no danger. Write for circular and prices.

The Pulverized Manure Co.
21 Union Stock Yards, Chicago.

No Night Fireman Needed
WITH THIS ONLY SELF-FEEDING HEATER

The Wilks Hot Water Heater furnishes the safest, easiest, cheapest way to provide heat and hot water at all times for farm buildings, garages, cottages, poultry houses, brooders, green-houses, golf and yacht clubs, etc., and is the *only heater that feeds itself.* Improved coal magazine keeps an even fire 10 hours.

Wilks Heaters

are built of best *steel* instead of the unreliable cast iron commonly used. Strongly riveted, caulked and reinforced. *Write for Free Book* describing, giving sizes, prices, etc. State full particulars and we will recommend the best heater for your needs, and guarantee it to give satisfaction if installed according to our directions.

S. WILKS MANUFACTURING CO.
3504 Shields Avenue, Chicago

GINSENG The most valuable crop in the world. Easily grown throughout the U. S. and Canada. Room in your garden to grow thousands of dollars' worth. Roots and Seeds for sale. Send 4c. for postage and get our booklet A-V, telling all about it. McDOWELL GINSENG GARDEN, Joplin, Mo.

Details of Building Construction

A collection of 33 plates of scale drawings with introductory text

By CLARENCE A. MARTIN
Assistant Professor, College of Architecture, Cornell University

This book is 10x12½ inches in size, and substantially bound in cloth. **Price $2**

MUNN & CO., 361 Broadway, NEW YORK

BUILDING Construction *and* Superintendence

By F. E. KIDDER, Ph.D., F.A.I.A.
Consulting Architect *and*
Author of "*The* Architect's and Builder's Pocket Book"

Part I. Masons' Work
430 Pages. 260 Illustrations
Part II. Carpenters' Work
550 Pages. 530 Illustrations
JUST PUBLISHED
Part III. Trussed Roofs *and* Roof Trusses
298 Pages. 306 Illustrations
Each volume 7x9¾ inches. Substantial cloth binding
Price for Parts I and II, $4.00 each
Price for Part III, $3.00. Sold Separately

Munn & Co., 361 Broadway, New York

so recommend the use of brush. Every garden should have at least three plantings of peas. Those in this space should be the latest, may be put in six weeks after the first, and should be planted an inch or a trifle more deep. The earlier ones need only to be covered with the soil. I approve of putting the seeds not more than half an inch apart in the shallow trench made for them.

In the next two-foot space plant beans, to be used early as string beans. At intervals of a foot apart in sowing, you may leave spaces of six inches in which to sow mignonette seed.

The next two-foot space is for a second crop of beans, sown from two to three weeks after the first.

Then come two three-foot spaces planned for two plantings of two rows each of peas. The very earliest, planted as soon as the ground can be worked, I would put in the outer of these spaces. The peas ought to be ready early in June. They can then have their places taken by the last planting of sweet corn.

The remaining seven feet of space may well be devoted to corn, the earliest (Early Cory) being planted near the outer edge of the garden. As soon as this planting is so large that it can no longer be cultivated, between the hills, seeds of Hubbard or Boston Marrow squashes may be planted. They will be well started while the corn is maturing, and after that is picked the stalks should be removed and the squashes given all the space in which to spread. They can lie till October.

Along this extreme edge of the garden I suggest that dahlia bulbs be set. They will be ready to blossom after the first, second and third plantings of corn are past. When you take up your last pea vines, unless it should happen to be very dry, you can sow spinach and turnips, with good prospect of having a crop by late November.

HOME-MADE TOOLS FOR THE AMATEUR GARDENER

THE WORK TABLE

By Ida D. Bennett

AN OUT-OF-DOOR work table is almost a necessity if one is to carry on any considerable gardening operations, or if one's gardening is wholy confined to the growing of indoor plants and flowers. Plants must be potted and repotted, bulbs cleaned and prepared for winter, and there must always be a place to keep things where they can be found when wanted, and what better place could be desired than a roomy table under a light shed, or even on the shady side of the house? The shed affords the advantage of being tenable in all sorts of weather, and if it has an earthen floor all the better, as there will then be no bother with the removal of every bit of spilled earth.

The table may be of the roughest so that it is roomy and of a convenient height to work at—a discarded kitchen table, a roughly put together table of boards or a discarded door laid across a couple of carpenter's horses answers admirably; but a regular table four or five feet long and about two and a half feet across with a four-inch board nailed along the back and ends is on the whole most satisfactory. The object of the board at back and end is to allow of the laying of pots on their sides rather than standing in piles where they are easily knocked over and broken, and also require more room. A roomy drawer under the table and a half shelf near the floor adds greatly to the convenience of the table, as the drawer forms a safe receptacle for packages of

A CRAFTSMAN HOUSE FROM CORNERSTONE TO CHIMNEY-POT CURIOUSLY SUGGESTS THE CHARACTER OF ITS UNIQUE INTERIOR

THIS TYPE OF COUNTRY HOME

is a combination of art, comfort and economy, including fireproof features in hollow brick, with tile, slate or asbestos roofs. We design and build them anywhere, all under one contract.

All materials and unique devices prepared in our own shops, including woodcraft, metal work and wall reliefs.

No objection to building according to your own plans and specifications. We invite your inspection of many attractive houses and bungalows built in the last few years, also numerous sketches at our studios.

This work is in a class by itself. No increase in cost over ordinary types.

BUILDERS AND CRAFTSMEN COMPANY
38 WEST 32ND STREET NEW YORK

INVESTIGATE OUR BUILDING METHOD

JUST PUBLISHED

Bungalows, Camps & Mountain Houses

Consisting of a large variety of designs by a number of architects, showing buildings that have been erected in all parts of the country.

Many of these are intended for summer use, while other examples are of structures erected in California and the Southern States for permanent residences. Also Camps, Hunters' Lodges, Log Cabins, etc. The book contains

Seventy Separate Designs

of which several are Log Cabins and Camps

78 Exterior Views, 12 Interior Views and 69 Floor Plans

In the text is given an article on "The Bungalow," with hints on selection of site, sanitation, lay-out and construction, together with a very complete description of each design, with cost where it could be obtained. The work is intended to meet the needs of a large class of people who are planning summer homes at low and moderate cost, for erection in the Woods, Mountains, and on Lake and Seashore. Size 8x9½ inches, bound in illustrated boards. Price, $2.00 postpaid.

MUNN & COMPANY, Publishers
361 Broadway, New York

Wall Papers and Wall Coverings

A PRACTICAL HANDBOOK

for Decorators, Paperhangers, Architects, Builders and House Owners, with many half-tone and other illustrations showing the latest designs

By ARTHUR SEYMOUR JENNINGS

EXTRACT FROM PREFACE

THE author has endeavored to include characteristic designs in vogue today, and to give reliable information as to the choice of wall papers as well as to describe the practical methods of applying them. In dealing with matters concerning decoration there is always the danger of leaning too much toward an ideal and of overlooking the practical requirements of commercial life. The author hopes that he has been successful in avoiding this fault, and that his book will be regarded as both practical and useful.

One Large 8vo Volume, Cloth. $2

MUNN & CO., 361 Broadway, NEW YORK

Fifty-four Years of Quality

Guarantee Labels

Guarantee labels on enameled ironware are various and are variously translated in practice.

Careful architects have come to understand that it is the spirit behind the guarantee that counts for most after all. The liberal, unquestioning, make-good policy behind every Wolff guarantee is responsible for unvarying Wolff specification as often as is the leadership of Wolff design.

L. Wolff Manufacturing Co.

Established 1855

Manufacturers of Plumbing Goods Exclusively
The only complete line made by any one firm

SHOWROOMS: 91 DEARBORN ST., CHICAGO
GENERAL OFFICES: 93 W. LAKE ST., CHICAGO
DENVER TRENTON

BRANCH OFFICES

Minneapolis, Minn.: 615 Northwestern Building
Omaha, Neb.: 1108-12 Nicholas Street
Kansas City, Mo.: 1205 Scarrett Building
San Francisco, Cal.: Monadnock Building
Cleveland, Ohio: Builders Exchange
Buffalo, N. Y.: 77 Richmond Avenue
Washington, D. C.: 327-328 Bond Building

Accurate information regarding THE WORLD'S INDUSTRIAL PROGRESS is a necessity of MODERN BUSINESS LIFE, as well as a subject of ABSORBING INTEREST for every thinking man and woman.

For nearly sixty-five years the

Scientific American

has been the most widely quoted authority on all matters relating to the progress made in the fields of discovery, invention and scientific news.

Free from dry technicalities, it tells the story of the WORLD'S PROGRESS in a fascinating and practical manner, which makes its weekly visits welcome to the entire family. It is unique among periodical literature because it contains authoritative information which cannot be obtained from any other source.

Subscription price, $3.00 per year.

The Season's Best Club Combinations

Scientific American or American Homes and Gardens	$3.00	
Review of Reviews	3.00	$4.45
	$6.00	
Scientific American or American Homes and Gardens	$3.00	
Review of Reviews	3.00	
World's Work	3.00	$6.80
Everybody's Magazine	1.50	
	$10.50	
Scientific American or American Homes and Gardens	$3.00	
Everybody's Magazine	1.50	
World's Work	3.00	$5.35
	$7.50	
Scientific American or American Homes and Gardens	$3.00	
McClure's Magazine	1.50	
Review of Reviews	3.00	$5.35
	$7.50	
Scientific American or American Homes and Gardens	$3.00	
World's Work	3.00	
Delineator	1.00	$5.10
	$7.00	
Scientific American or American Homes and Gardens	$3.00	
McClure's Magazine	1.50	
Woman's Home Companion	1.25	$4.60
	$5.75	

After February 1st, 1909, 25c. must be added to combinations including Woman's Home Companion.

MUNN & CO., 361 Broadway, New York City

seed, stakes and twine for supporting plants, catalogues and other small articles in constant demand by the plant grower, while the half shelf provides a place for the pots too large for the top of the table, the box of sphagnum moss and charcoal and broken shards for drainage and the like. On the floor a heap of potting soil may be piled and will remain moist much longer than if placed in a box. The value of having potting material and soil always ready can not be underestimated, as it insures prompt attention which might not be secured if it was necessary to hunt around for material with which to work.

To this convenient place the box of plants or bulbs from the florist will be brought for unpacking and all the muss and litter indoors avoided. If the table is under a shed the plants can be removed from the box, stood up on the table and allowed to remain over night, or a day if necessary, as the tops may be freely sprinkled and the package dipped in water, and the plants be the better for their temporary sojourn in the cool, dim interior than if placed at once in the open ground. Florists' packages have an aggravating way of arriving on a Saturday afternoon when it is often impossible to attend to them, and plants by mail should never go at once into the open ground or window boxes, but should be potted off into small pots and allowed to become established before trusting them to the open.

A stool or chair of convenient height is very useful where there is much potting of small plants to be done, as the potting off of seedlings from flats or hotbeds, and it is surprising how rapidly this work will be done when everything is conveniently at hand and one can work freely without regard to the litter they may create.

MAKING A COUNTRY HOME

(*Continued from page vii*)

beauty will characterize the whole farm or the acres, whether more or less. I think it will dispense with lath and plaster, and be finished in our beautiful native woods—more simple, and clean, and economical. Perhaps my article will assist you in looking upon the houses which you see as stages of American history. Now that the country has all the advantages of city life, in addition to its own peculiar pleasures and profits, can we not look confidently forward to a distinctively American architecture, that shall displace the unmeaning as well as the disagreeable, and shall be fitted to its surroundings?

NEW BOOKS

STYLES OF ORNAMENT. By Alexander Speltz. New York: Bruno Hessling. Pages 656. Price, $5.00.

This is an authorized English edition of this handbook, translated and edited by David O'Connor. It is a book that has been prepared to meet the needs of the professional designer, but is one that will be found useful and suggestive by the reader, the student and the layman. The scheme provides for 400 plates, each comprising selected examples of typical ornamental detail, while the text for the most part is limited to a brief indication of the source from which the illustration is taken. The book may not, indeed, supersede more extensive publications on this subject, but it is convenient in size, clear in typography, and abounds with well-chosen models and designs.

D & C LAKE LINES

The Great Lakes Trip

All the ports on the Great Lakes are reached regularly by the ten large steamers of the D. & C. Lake Lines. This fleet of fast, safe and comfortable steamers operate daily trips between Buffalo and Detroit, Cleveland and Detroit, four trips per week between Toledo, Detroit, Mackinac and wayports, and two trips weekly between Detroit, Bay City, Saginaw and wayports. A special steamer leaves Cleveland twice a week direct for Mackinac, stopping at Detroit every trip and at Goderich, Ont., every other trip. Send two cent stamp for illustrated Pamphlet and Great Lakes Map. Address: L. G. Lewis, G. P. A., Detroit, Mich.

P. H. McMILLAN, Prest.
A. A. SCHANTZ, Gen. Mgr.

Rail Tickets available on all Steamers

THE COAST LINE TO MACKINAC

DETROIT & CLEVELAND NAV. CO.

The Oil that Turns Minutes to Miles

Vacuum MOBILOIL relieves your automobile of wear and friction, and leaves it free to wrestle with the minutes and the miles. It makes perfect lubrication a scientific certainty, and saves paying for experiments and accidents, disguised as repairs.

VACUUM

MOBILOIL

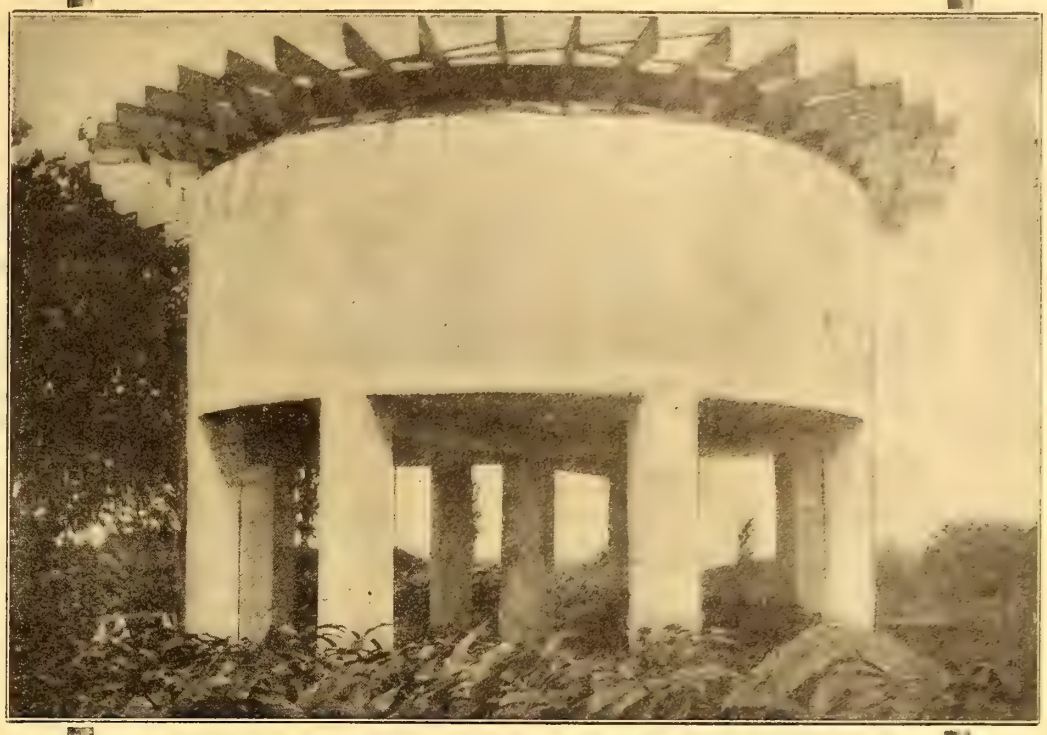
is made in six different grades for various kinds of automobiles. One of these grades is the *one oil*, the label of which guarantees it to be exactly suited to the requirements of your car.

Do not experiment. Write for free booklet, listing every automobile made and showing grade of MOBILOIL necessary for its perfect lubrication. Also contains track records to date and other facts of vital interest to motorists.

MOBILOIL, in barrels and in cans with patent pouring spout, is sold by dealers everywhere. Manufactured by

VACUUM OIL CO., Rochester, N. Y.

FLOORS — NOTE CONTINUOUS BOND — ROOFS



A concrete tank erected on estate of Edmund Tatham, Katonah, New York

Frederick J. Sterner, Architect - - New York
De Lancey A. Cameron, Builder - - New York

Tank designed for storage supply of 15,000 gallons, built entirely of concrete reinforced with Clinton welded wire. Before roof was placed over tank, and during winter months, ice 10 inches thick formed on water stored therein. No cracks or leakage have developed.

Clinton Wire Cloth Company
CLINTON, MASS.

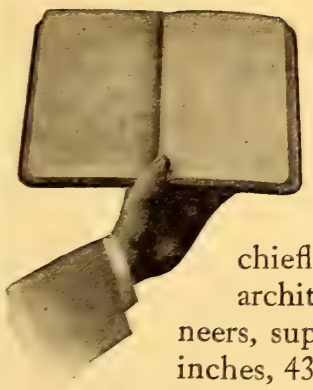
Ceilings — Partitions

Fireproofing Departments:
ALBERT OLIVER, 1 MADISON AVE., NEW YORK
WASHINGTON: Rosslyn Supply Co., Colorado Building
CHICAGO: Clinton Wire Cloth Co., 30-32 River Street
BUFFALO, N. Y.: Buffalo Wire Works Co., Inc.
CLEVELAND, OHIO: Carl Horix, 428 Garfield Building
ST. LOUIS: Hunkins-Willis Lime & Cement Co.
SAN FRANCISCO: L. A. Norris, 835 Monadnock Bldg
SEATTLE: L. A. Norris, 909 Alaska Building
SYRACUSE, N. Y.: National Construction Company

JUST PUBLISHED

The New Building Estimator

BY WILLIAM ARTHUR

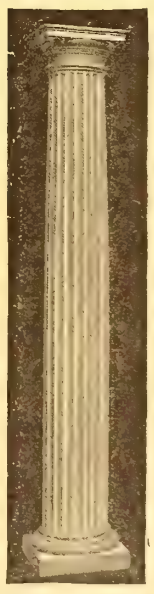


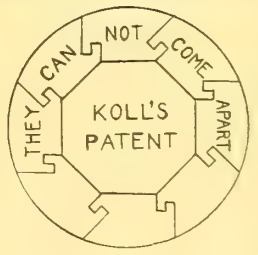
A PRACTICAL guide to estimating the cost of labor and material in building construction from excavation to finish, with various practical examples of work presented in detail, and with labor figured chiefly in hours and quantities. A hand-book for architects, builders, contractors, appraisers, engineers, superintendents and draftsmen. Size, 4¾x6¾ inches, 437 pages, cloth bound. Price, $2.50 postpaid

AN INDISPENSABLE AID TO CONTRACTORS

A circular describing this book will be mailed on application
MUNN & COMPANY, 361 BROADWAY, NEW YORK

Koll's Patent Lock-Joint Columns





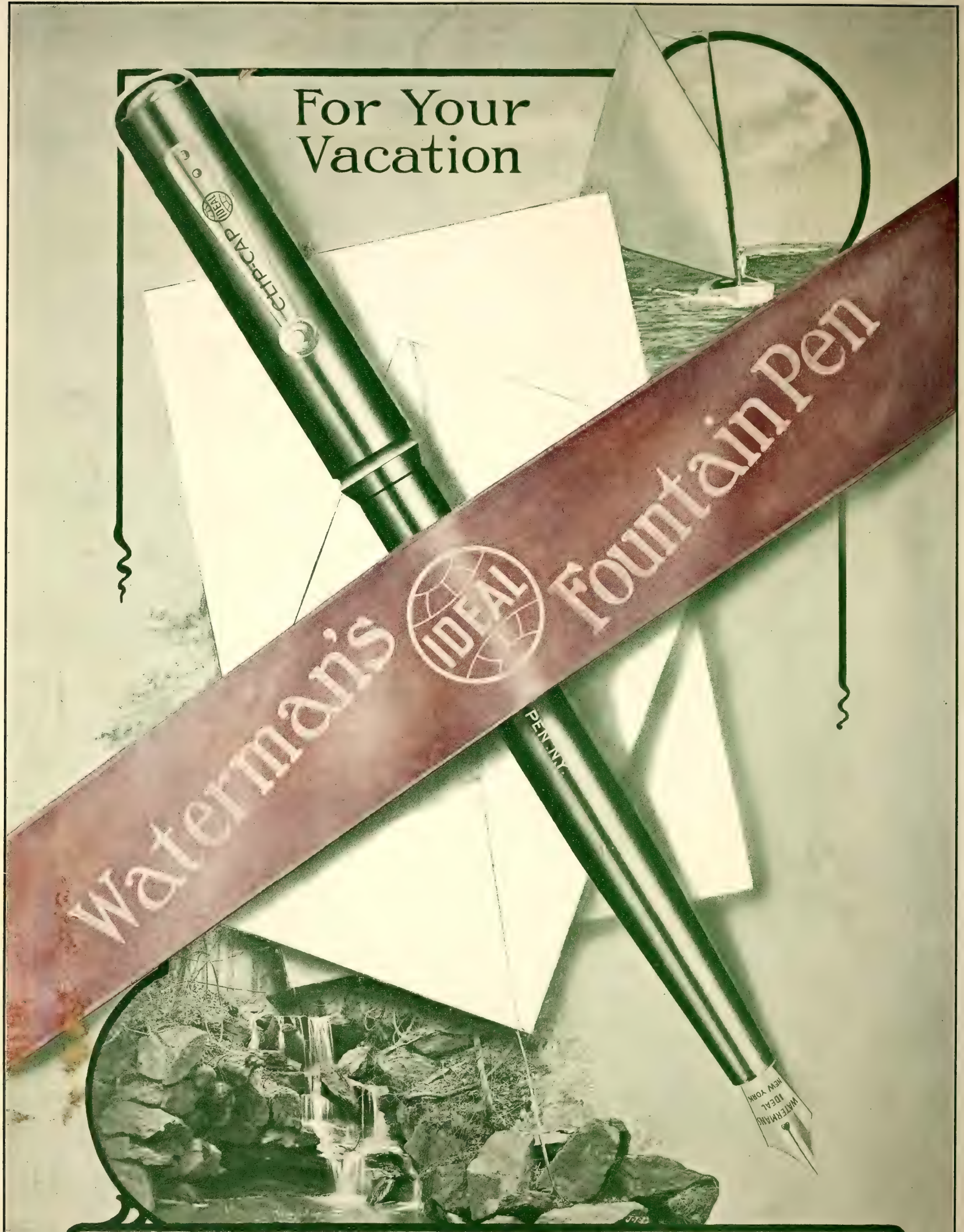
The Best for Pergolas, Porches or Interior Use are made exclusively by

Hartmann - Sanders Company

Elston and Webster Avenues
CHICAGO, ILL.
Eastern Office, 1123 Broadway
NEW YORK

Send for Catalogue A-19 of Columns, or A-29 of Sun-dials, Pedestals, etc. (See also "Sweet's Index.")

For Your Vacation



A Waterman's Ideal is especially useful when you are away from home

The One Vacation Necessity

Be independent of the poor writing makeshifts you find on your travels—write when you want to and where you want to. Let the high quality of a Waterman's Ideal serve your requirements and enjoy the satisfaction of owning the best.

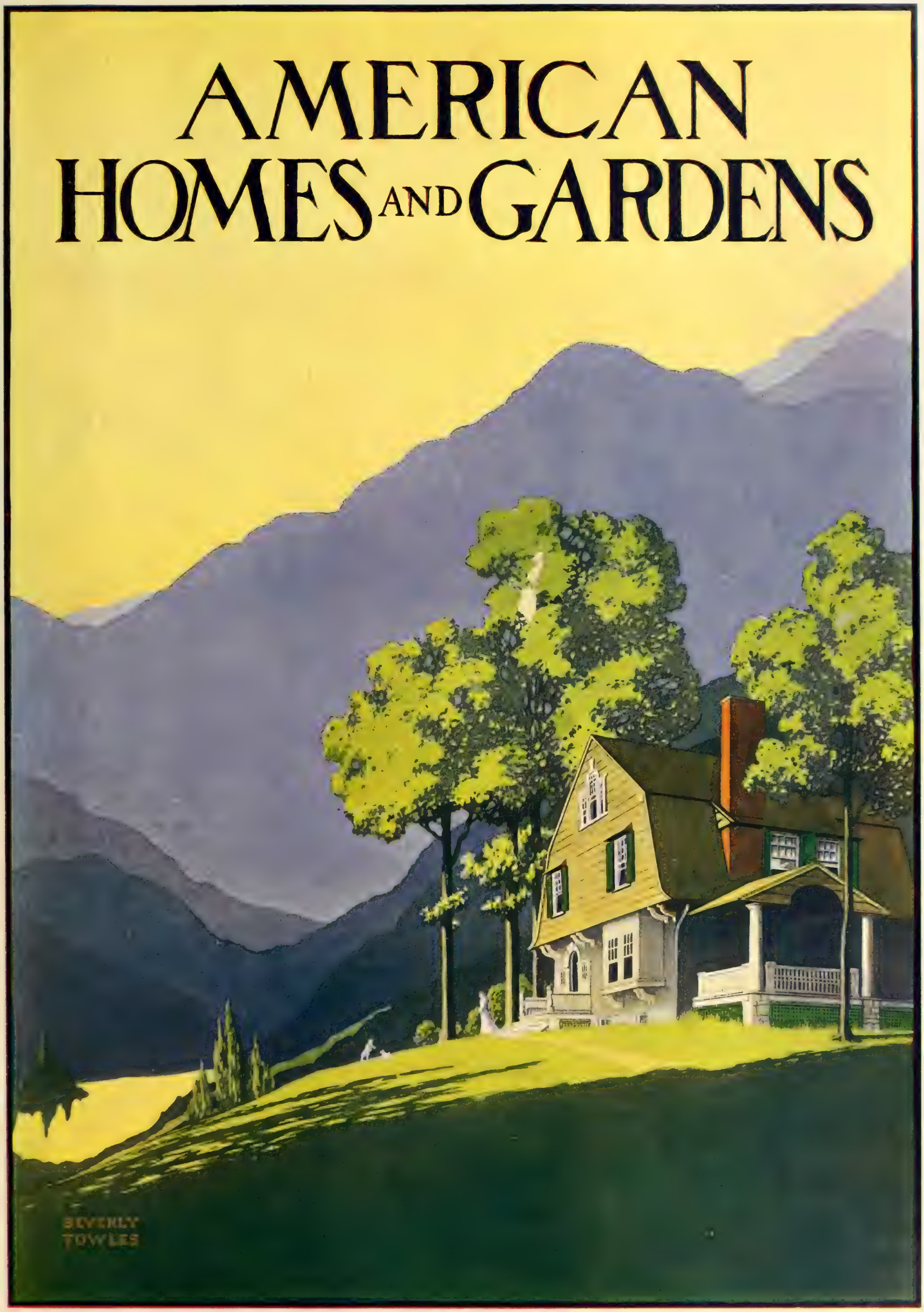
Booklet sent on request

Ask Your Dealer — **L. E. WATERMAN CO., 173 Broadway, New York**

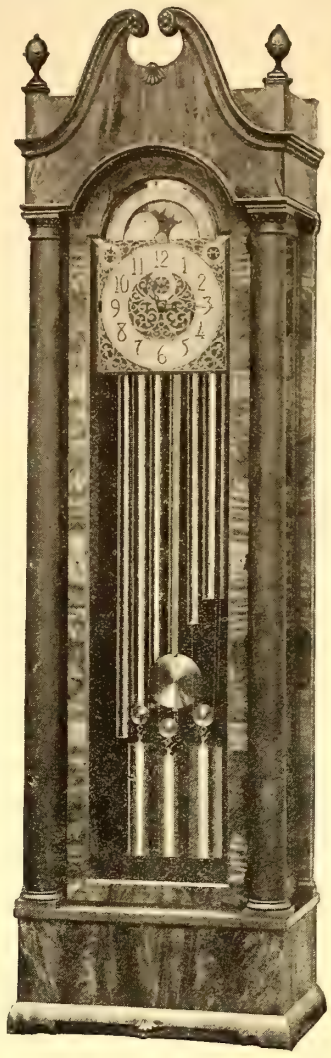
Vol. VI SEPTEMBER, 1909 No. 9

NA
100
512
Hort.

AMERICAN HOMES AND GARDENS



$3.00 A YEAR MUNN & CO., INC., Publishers PRICE, 25 CENTS



HALL CLOCKS

Our line comprises the finest and most complete designs of high-class clocks on the market. Our movements are superior in nearly every detail and the purchaser is assured that he can buy the best by ordering a "Waltham."

We will soon have ready for delivery, our new Chiming Movement which chimes either Westminster, Whittington or St. Michaels.

Our "Willard" or Banjo Clock is a model of perfection and appeals to those who desire a first-class article in every respect.

If your local dealer does not sell our line, send direct for illustrated catalogue.

Waltham Clock Company
Waltham, Mass.

Many Uses of a Conservatory

Not only is your conservatory a flower garden, connected with your house and serving you the year round, but it may be a living-room, where the morning sun-bath is enjoyed, or the afternoon tea delightfully served. It adds another unique, attractive room to your home, one from which all the family will get great satisfaction and comfort. Consult us about its construction.

Hitchings & Company

Designing and Sales Offices
1170 BROADWAY, NEW YORK

General Offices and Factory
ELIZABETH, N. J.

JUST PUBLISHED JUST PUBLISHED

CRAFTSMAN HOMES

By GUSTAV STICKLEY

A Book for Architects, Builders, Homemakers and Housekeepers

Containing practical house plans, exteriors and interiors, suggestions for gardens, gates and pergolas, models for furniture, metal work and needlework. The house plans comprise a choice collection of about fifty designs of country, suburban and town houses, bungalows, cottages and cabins, ranging in cost from $500 to $15,000. They have won high recognition as the first fearless expression of an independent national style of building, that meet the needs and characteristics of the American people.

CONTENTS: Craftsman houses and plans, halls and stairways, living-rooms, dining-rooms, porches and terraces, the effective use of cobblestones, gates and gateways, gardens, exterior features and materials, wall space and color schemes, interior woodwork and structural features, choice of woods, floors and how to finish them, treatment of interior woodwork, decoration and finishing, home cabinet-making, and metal work.

SIZES: 8½ x 11 inches. Fine India tint plate paper. Duotone sepia ink. Over 200 half-tone engravings of exteriors and interiors. Four full-page color plates and portrait sketch. Bound in full linen crash. Price, $2.00 net. Postage, $2.24.

MUNN & COMPANY, 361 Broadway, New York

The SCIENTIFIC AMERICAN BOY

By A. RUSSELL BOND

12mo. 320 Pages. 340 Illustrations. Price, $2.00, Postpaid.

A STORY OF OUTDOOR BOY LIFE, suggesting a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. Complete practical instructions are given for building the various articles. The book contains a large number of miscellaneous devices, such as scows, canoes, windmills, water wheels, etc.

MUNN & CO. Publishers of "SCIENTIFIC AMERICAN" 361 Broadway, New York

JUST PUBLISHED

AMERICAN RENAISSANCE

A Review of Domestic Architecture By Joy Wheeler Dow, Architect

ILLUSTRATED *by* NINETY-SIX HALF-TONE PLATES

EASTOVER (Miniature). THE GARDEN FRONT
From "American Renaissance"

This book is a carefully prepared history of American Domestic Architecture from Colonial days, illustrated in the most elaborate manner and worthy a place in every architectural library, and should be read by every one who desires to familiarize himself with Colonial architecture and its effect on the architecture of to-day.

CONTENTS.—Chapter I., Ethics; II., Art and Commercialism; III., The Ancient Regime—Andrew Jackson; IV., Humble Beginnings of a National School; V., The Grand Epoch; VI., Early Nineteenth Century Work; VII., The Transitional Period; VIII., Reign of Terror—Its Negative Value; IX., Fashion in Architecture; X., Adaptation; XI., Concerning Style; XII., Conclusion.

HANDSOMELY BOUND IN CLOTH, GILT TOP

Price, $4.00 net

MUNN & CO., PUBLISHERS, NEW YORK

SMITHSONIAN
AUG 12 1985
LIBRARIES

THE HERITAGE OF A. T. STEWART } BRIDGED TO { ITS TWICE-AS-LARGE WANAMAKER TWIN

THE GREATER WANAMAKER'S

Offers Its Metropolitan Shopping Advantages to Visitors and Mail Order Buyers Everywhere

One of the most interesting "sights" of New York to visitors; the most painstaking and helpful Mail Order Service for those who can't come in person.

THE WANAMAKER WOMAN'S STORE

In constant touch with Paris, London, Berlin, and every source of Fashion abroad and at home.

To give a proper suggestion of Wanamaker merchandise, to the entire American public we have in preparation the following MERCHANDISE REFERENCE FOLIOS—which will be mailed as soon as ready.

OF CHIEF INTEREST TO WOMEN

1. THE FOLIO OF FASHIONS. (Picturing and describing the newest fashions in Dresses, Suits and Coats, for Women and Girls.)
2. THE LINGERIE BOOK. (With illustrations and descriptions of Women's Waists, Negligees, House Gowns, Muslin Underwear, Silk Petticoats and Corsets.)
3. THE MILLINERY BOOK.
4. THE FOLIO OF CHILDREN'S WEAR.
5. THE DRESS GOODS AND SILKS LISTS.
6. THE HANDKERCHIEF FOLIO.
7. THE BOOK OF HOUSEKEEPING LINENS.
8. THE FANCY GOODS BOOK. (Illustrating and describing Women's Neckwear, Gloves, Jewelry, Belts, Fans, Combs, Toilet Articles, Leather Goods, Notions, Dress Trimmings, Laces, Embroideries, Art Embroideries, Umbrellas, Parasols, and many other small wares.)

OF CHIEF INTEREST TO MEN AND BOYS

9. THE BOOK OF MEN'S AND BOYS' WEAR. (Illustrating and describing latest New York styles in Men's and Boys' Clothing and Furnishings—excepting Underwear and Socks, for which see Underwear and Hosiery Folio.)

OF INTEREST TO BOTH MEN AND WOMEN

10. THE SHOE FOLIO.
11. THE HOSIERY AND UNDERWEAR FOLIO.
12. THE BOOK LIST. (Containing News and Prices about New and Standard Books.)

THE WANAMAKER GALLERIES

The New 16-story Wanamaker Building (exclusive of the Main floor, which is The Man's Store) is devoted to the most comprehensive assemblages of Home Furnishings, and the broadest facilities for Home Decoration existing anywhere.

ANYTHING needed for the Home can be bought, most satisfactorily, by mail; and we can take up the entire question of decorating and furnishing your new house, or re-decorating your old house ANYWHERE, by mail. Write us about it.

This interesting Catalogue literature to select from—sent upon request:

Catalogue-Folio—"PALATIAL FURNITURE"
Catalogue-Folio—"FOREFATHERS' FURNITURE"
Catalogue-Folio—"MODERN FURNITURE"
Catalogue-Folio—"MODEL METAL BEDSTEADS"
Catalogue—"HYGIENIC BEDDING"
THE PIANO Catalogue.
Catalogue of China, Cut Glass and Art Wares.
Catalogue of Lace Curtains and Upholstery.

We will be glad to send to you, FREE OF CHARGE, any of the above folios, or catalogues in which you may be interested; or to send any special information you may desire.

If you wish to learn more about WANAMAKER'S, its methods, facilities and merchandise, write for "The GUIDE BOOK," which will be sent upon request.

Address your communication to "Section B"

JOHN WANAMAKER, New York

Sample and Circular Free

A House Lined with

Mineral Wool

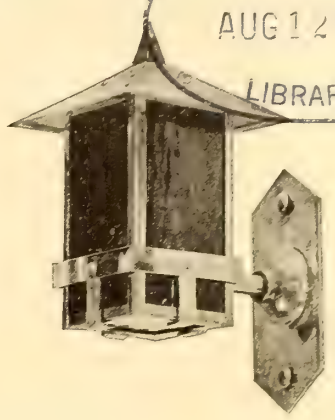
as shown in these sections, is *Warm in Winter, Cool in Summer,* and is thoroughly DEAFENED.

The lining is vermin proof; neither rats, mice, nor insects can make their way through or live in it. MINERAL WOOL checks the spread of fire and keeps out dampness.

CORRESPONDENCE SOLICITED

U. S. Mineral Wool Co.

140 Cedar St., NEW YORK CITY



THE demand in the past few years for homes on Mission Lines has made possible the use of many a quaint old lighting instrument of this most interesting period of work.

The ENOS COMPANY Makers of Lighting Fixtures

NEW YORK

Office and Factory: 7th Av. and 16th St.
Salesrooms: 36 West 37th St.
Boston: H. F. Esterbrook, Inc., 9 Park Street
Chicago: W. K. Cowan & Co., 203 Michigan Blvd.
Baltimore: 519 North Charles St.
San Francisco: 1748 California St.
Pittsburg: G. P. Norton, Century Building
Toronto: 94 King St West
St. Louis: N. O. Nelson Mfg. Co.
Spokane: Cutter & Plummer Inc.
Portland, Ore.: J. C. English Co., 128 Park St.
Seattle: Cox & Gleason, 1914 Second Ave.

H. M. STEPHENSON, Architect Boston

DEXTER BROTHERS'

English Shingle Stains

produce soft even shades in Moss Greens, Tile Reds and beautiful Silver Grays.

PETRIFAX

Damp-Resisting

INTERIOR and EXTERIOR COATING FOR BRICK, CONCRETE or CEMENT

"If the coat fits, put it on"

DEXTER BROTHERS COMPANY

103-105-107 Broad Street, BOSTON

AGENTS: H. M. Hooker Co., 128 W. Washington St., Chicago; W. S. Hueston, 6 E. 30th St., New York; John D. S. Potts, 218 Race St., Philadelphia; F. H. McDonald, 619 The Gilbert, Grand Rapids, Mich.; F. T. Crowe & Co., Seattle, Spokane, Tacoma, Wash., and Portland, Ore.; M. D. Francis, Atlanta, Ga.; F. S. Coombs, Halifax, N. S.

Antiques

Photographs and descriptions of genuine antique pieces sent on request. List your wants of antiques with me.

RALPH WARREN BURNHAM

IPSWICH IN MASSACHUSETTS

Wall Papers and Wall Coverings *A Practical Handbook*

For Decorators, Paperhangers, Architects, Builders and House Owners, with many half-tone and other illustrations showing latest designs

By ARTHUR SEYMOUR JENNINGS

Includes characteristic designs in vogue to-day. Gives reliable information as to the choice of Wall Papers and describes the practical methods of applying them

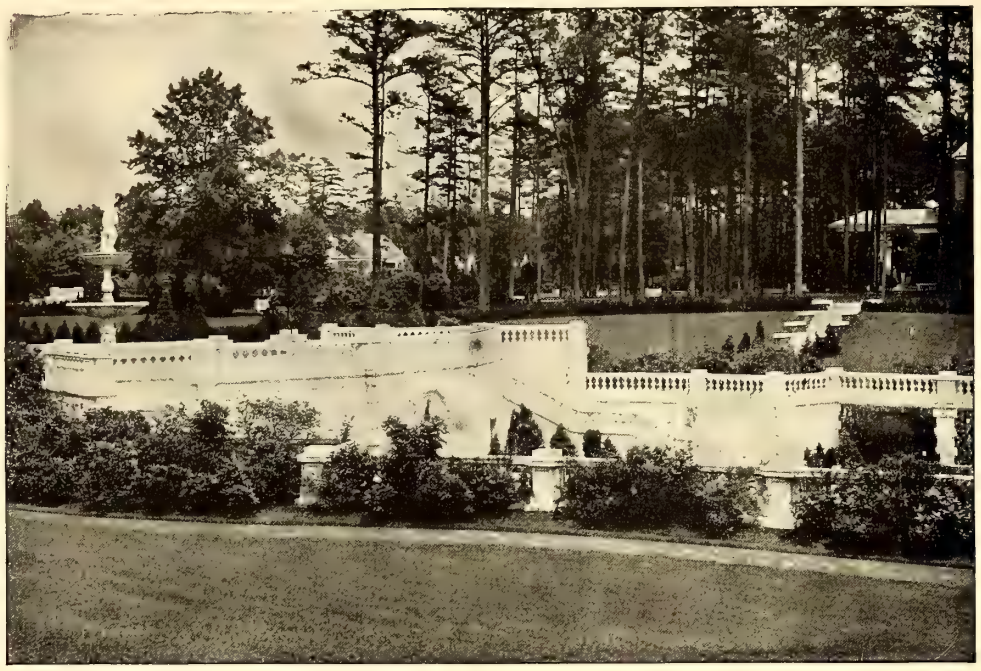
One Large 8vo Volume. Cloth. Price $2

MUNN & CO., 361 Broadway, NEW YORK

American Estates and Gardens

By BARR FERREE

Editor of "American Homes and Gardens," Corresponding Member of the American Institute of Architects and of the Royal Institute of British Architects



4to. 11x13½ inches. Illuminated Cover and 275 Illustrations. 306 Pages.

Price, $10.00

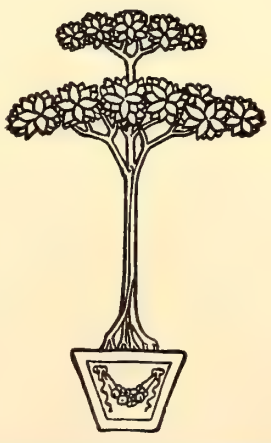
A sumptuous book, dealing with some of the most stately houses and charming gardens in America. The illustrations are in nearly all cases made from original photographs, and are beautifully printed on double coated paper. Attractively bound. The book will prove one of the most interesting books of the year and will fill the wants of those who desire to purchase a luxurious book on our American Homes.

Munn & Company
Publishers of "Scientific American"
361 BROADWAY, NEW YORK

THE NEW AGRICULTURE

By
T. BYARD COLLINS

8vo. Cloth. 376 Pages
100 Illustrations
Price, $2 00, Postpaid



THIS new and valuable work sets forth the changes which have taken place in American agricultural methods which are transforming farm life, formerly so hard, into the most independent, peaceful and agreeable existence. Farm life to-day offers more inducements than at any previous period in the world's history, and it is calling millions from the desk. The present work is one of the most practical treatises on the subject ever issued. It contains 376 pages and 100 illustrations.

In brief, the Contents are as follows:

CHAPTER I. This chapter contains a general statement of the advantages of farm life.

CHAPTER II. Deals with the vast systems of irrigation which are transforming the Great West, and also hints at an application of water by artificial means in sections of the country where irrigation has not hitherto been found necessary.

CHAPTER III. Gives the principles and importance of fertilization and the possibility of inoculating the soil by means of nitrogen-gathering bacteria.

CHAPTER IV. Deals with the popular awaking to the importance of canals and good roads, and their relation to economy and social well-being.

CHAPTER V. Tells of some new interests which promise a profit.

CHAPTER VI. Gives a description of some new human creations in the plant world.

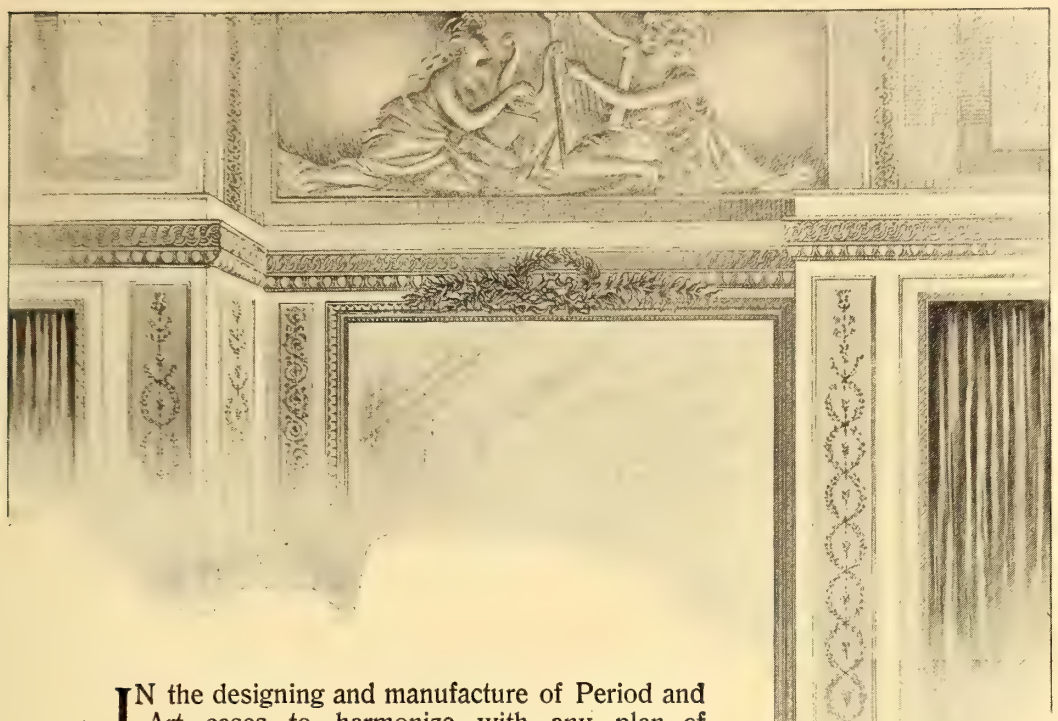
CHAPTER VII Deals with new varieties of grain, root and fruit, and the principles upon which these modifications are effected and the possibilities which they indicate.

CHAPTER VIII. Describes improper methods in agricultural practice.

CHAPTER IX. Devoted to new machinery by which the drudgery of life on the farm is being eliminated, making the farm a factory and the farmer the manager of it.

CHAPTER X. Shows the relation of a body of specialists to the American farmer, who can have the most expert advice upon every phase of his work without any expense whatever to himself.

MUNN & CO., Publishers 361 Broadway, NEW YORK



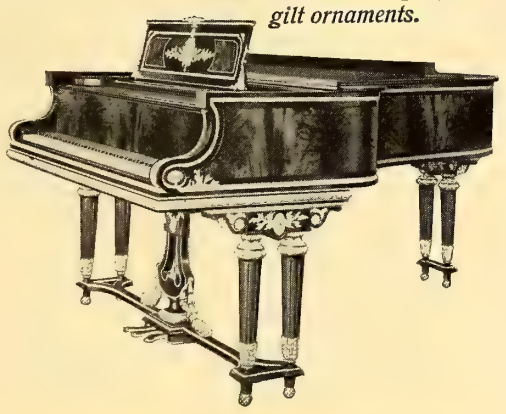
IN the designing and manufacture of Period and Art cases to harmonize with any plan of architecture or decoration, Steinway & Sons are the recognized leaders, as in all other departments of piano making—a distinction they have enjoyed for three generations. Every

STEINWAY

ART PIANO

is a true representation of its respective period—a veritable gem of beauty and perfection. A visit to the Steinway Studios will reveal that, in these masterpieces of piano-craft, music and decorative art are so deftly blended that they at once command the admiration and praise of architect, artist and connoisseur.

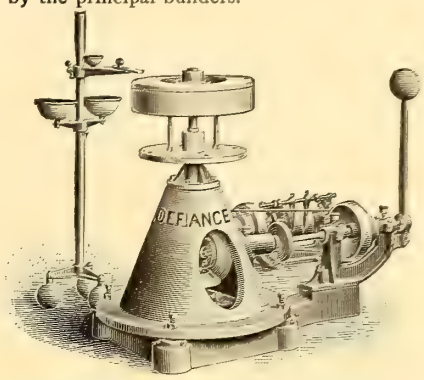
STEINWAY & SONS
Steinway Hall
107-109 East 14th Street, New York
(Subway Express Station at the Door)



Steinway Parlor Grand Piano in the period of Louis XVI. Mahogany with gilt ornaments.

Automobile Owners and Drivers ATTENTION!

Stop that constant vibration by having the fly-wheel of your engine given a perfect running balance. This machine is used by the principal builders.



Patent Motor Fly-Wheel Balancer

MANUFACTURED BY
THE DEFIANCE MACHINE WORKS
DEFIANCE, OHIO

From Our No. 3 Book

GOING TO BUILD?

SAVE MONEY ON PLANS

We are selling plans that are **practical** and at a price consistent with high-class work.

GET OUR BOOKS

No. 1. 25 Residences, cost $1,500 to $5,000 ..... $ .50
No. 2. 25 Residences, cost $5,000 to $20,000 ..... 1.00
No. 3. 25 Concrete Residences 1.00

Photographic cuts of 2-Flats, Churches, Schools, Business Blocks, etc., ten for $1.00. **Order now!**

Arthur G. Lindley Co., Architects
SCHENECTADY, N. Y.
We Enter Large Competitions

Enametile
THE NEW TILE

installed in the **Bathroom, Hall** or **Vestibule** of residences and public buildings, means the **minimum** of **cost** combined with the **maximum** of **beauty** and **durability.**

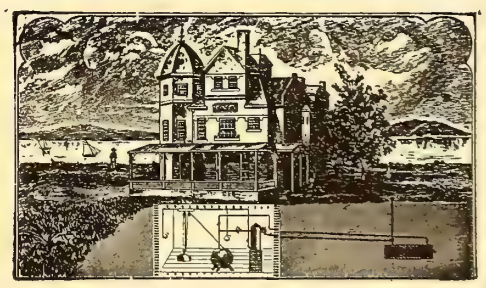
IDEAL FOR WALLS, CEILING, WAINSCOTS

Enametile is flexible metal, embossed and highly enameled, to perfectly reproduce the effect and coloring of the most artistic tiling at **one-third** to **one-half** the **cost.** It **will not crack, break** or **loosen.**

EASILY AND QUICKLY INSTALLED

Send for HANDSOME ART PORTFOLIO, showing many of the beautiful designs of **Enametile,** in original colors, and full information. Investigate **Enametile,** it will pay you. Plans and estimates supplied you direct, or your contractor or architect.

NEW YORK METAL CEILING CO.
Manufacturers of Metal Ceilings for Business and Public Buildings. Catalogue free.
544 W. 24th Street, New York City



THE **most modern,** and **best illuminating** and **cooking** service for isolated homes and institutions, is furnished by the **CLIMAX GAS MACHINE.**

Apparatus furnished on **TRIAL** under a **guarantee to be satisfactory** and in advance of all other methods.

Cooks, heats water for bath and culinary purposes, heats individual rooms between seasons—drives pumping or power engine in most efficient and economical manner—also makes brilliant illumination. **IF MACHINE DOES NOT MEET YOUR EXPECTATIONS, FIRE IT BACK.**

Send for Catalogue and Proposition.

Low Price Better than City Gas or Electricity and at Less Cost.
Liberal Terms

C. M. KEMP MFG. CO.
405 to 413 E. Oliver Street, Baltimore, Md.

MOTT'S PLUMBING

IN AMERICA'S BEST HOTELS

EXPERIENCED hotel owners, who provide from 200 to 1000 bathrooms under one roof, know that the qualities of durability, cleanliness and beauty are *imperative*. On a strictly business basis of *value* the following modern hotels have been equipped with Mott's Fixtures. Read the list (a partial one) and consider its significance to every home or building owner in this country:

In New York City, The Plaza, St. Regis, Waldorf-Astoria, Astor, Holland House, Knickerbocker, Imperial, Manhattan and Savoy. Also the new Apthorp and Belnord Apartments.

In Boston, The Touraine.

In Philadelphia, The Bellevue-Stratford.

In Chicago, The La Salle.

In Minneapolis, The Radisson, The Dyckman.

In San Antonio, The St. Anthony.

In Salt Lake City, The Utah.

In New Orleans, The Monteleone and The Grunewald.

In Quebec, The Chateau Frontenac.

In Rome (Italy), The Regina.

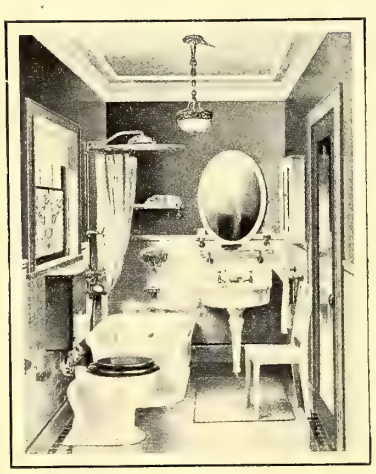
"Modern Plumbing"

A booklet showing 24 model bathroom equipments costing from $85 to $3000. Full descriptions with price of each fixture and helpful hints on tiling and decoration. Will be sent on receipt of 4 cents to cover postage.

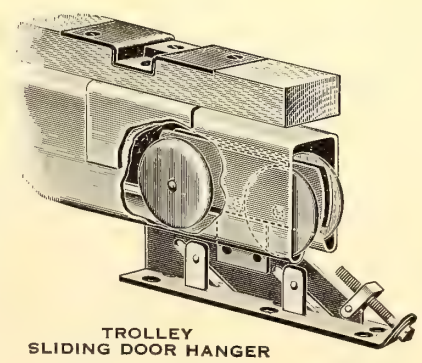
THE J. L. MOTT IRON WORKS
Fifth Ave. and 17th Street
NEW YORK CITY

BRANCHES:

Boston, Chicago, Philadelphia, Pittsburgh, Detroit, Minneapolis, Washington, St. Louis, New Orleans, San Francisco, San Antonio, Atlanta, Seattle and Indianapolis.
CANADA: 83 Bleury St., Montreal.



1828—OVER EIGHTY YEARS OF SUPREMACY—1909

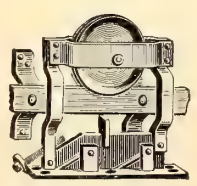


TROLLEY
SLIDING DOOR HANGER

LANE HANGERS

The Standard *of* Excellence

TIMBER
HANGER



"BALL-BEARING"
SLIDING DOOR HANGER

SEND FOR COMPLETE CATALOG

LANE BROTHERS CO.
434-466 Prospect St., Poughkeepsie, N. Y.

THE HOME TOWN

By Aldis Dunbar

THOSE who go "a-moving" are either house-hunters or home-seekers. One goes on quest for the body, the other for the soul of an ideal dwelling-place. Selections once made, house-hunters become temporary occupants, more or less critical; home-seekers, if the real resemble even faintly their ideal, true lovers. To many of these the up-to-date suburb, with asphalt roadways, trolley and electric-light wires, thinly veneered cement pavements and rows of half-hearted saplings, arisen ready-made from an outskirt of the city, are far less attractive than some modest village whose great elms and maples, sidewalks of wood or tanbark, hold a personal charm, where each house was built for somebody, not hurried into being, one of a wholesale batch.

No cluster of homes, whether near the stir of a great city or among remoter valleys, can avoid changes. It is the law. The most conservative hamlet must either progress or go tottering backward. It is for those who, loving their home town, would see it retain its homely, wholesome character, to say whether it shall thrive quietly or wither up and decay. Given men and women born and brought up with real affection for it, no home town need suffer when compared with its rival, the modern suburb.

Families die out or move away. Then you, who remain, must decide who shall replace them. Restless house-hunters, here and gone, leaving only a trail of fads. Home-seekers, whose children will grow up with yours, to become responsible citizens. Which class would you attract? Manifestly the latter. But how? Frankly, few home-seekers will settle by choice in a town out at heels and elbows—a reputation far too easily acquired.

Here is a modest little woman, cultivated, mother of children, wife of a business man. On his account the quiet nest she seeks must not be too far from the city, yet she longs for one within reach of real country, fields and forests, for her boys and girls. So, consulting maps, time-tables and advertisements, she fares forth cheerily.

The spring afternoon is sunny. To eyes wearied by the glare on cement and asphalt at Chippendale-on-the-River and Queen Anne Heights, visited earlier, the maple shadows on our quiet main street fall pleasantly. Green lawns and shady yards bring thought for "the children" as she passes them, guided by a clerk from the local real-estate office. Attractive, as she approaches, is an old square brick mansion, over which wistaria and Virginia creeper straggle, long ends hanging loose where winds have torn them free. They half conceal the faded "To Let" and "For Sale" signs, and wickedly suggest an untidy old person who has "slept in her hair."

A latticed arbor in the side yard conjures up dolls' tea parties; but bricks are missing from the walk leading to the paneled front door with quaint fanlight. A queer down-chimney smell pervades the damp hall. The massive woodwork is worthy attention, and in the dining-room are fascinating cupboards with diamond-paned doors, perilously loose on their hinges, as are those of the bedrooms upstairs, one of which must be lifted open.

"Plenty of closets!" Yes, but she notes with creepy distaste the splotches of dirty gray paint on the uneven boards. Rugs lie on the neatly stained floors of her city flat, and—moving costs without buying carpets.

Going out she catches sight of the missing front gate under lilac bushes whose sprouts have grown up through its rusty ironwork.

Facing a charming lane is a low brown frame cottage. Barberry hedges enclose it, and dormer

windows peep so enticingly that she tries not to see how the front porch sags under the feet of the young man, whose key refuses to fit the lock. "Around back" her escort props broken steps against a doorsill, and holds aside rampant rose vines that she may enter. Her heart, resolutely hopeful, chills at the comfortless aspect of the bare rooms. Scraps of frayed linoleum cling to the floor of the passage; soot has fallen from the stovepipe hole in the kitchen, where worn stove brushes, rags, black and stiff, lie beside a broken plate, thick with murky paste, in the open pot closet. In the dining-room only sunrays from shutter chinks reveal shreds of excelsior and paper on the floor. In the front rooms, however, while lower shutters are closed, upper ones hang wide open. The glare shows every nail-hole in the walls, every blemish and scratch marring woodwork and paper. It seems bleak and cheerless as any deserted photograph gallery, spite of the roomy bay windows, "built-in" bookshelves, and broad, hospitable stairway.

Feeling the fatigue born of disappointment, she follows her guide up the street again, seeing now hints of local neglect; a loose board on the street crossing; rusty tin cans in the long grass beyond the broken fence of an empty lot; letters missing from the sign above the post office; a lamp post, storm bent, leaning against a tree; a deep washout, bridged by a plank, in the sidewalk.

Though paint be peeling from the door of House Number Three, our home-seeker would gladly find it her goal. Alas, though unswept, it is well garnished. No closet, windowsill or mantelpiece lacks bottles—patent medicine bottles, empty or leaking repellant liquids over the white-painted shelves. A hasty glimpse of that forgotten crypt, the cellar, caught as a match flickers up, is not alluring. Ash barrels, more bottles (broken), dusty boards, thick with cobwebs—here the match goes out, and in darkness she feels her way up the steep, unrailed stair. Seeing the two last houses, with half their shutters gone, train time becomes her excuse for not looking further. Hurrying toward the station, numb, chilled and homesick for well-warmed, familiar rooms, is it matter for wonder that the fresh plaster and spandy-new environs of Chippendale-on-the-River, where lath-ends and shavings are the only rubbish, seem admirable. The home town has lost her.

Through trifles? No. The most desirable tenant or purchaser will turn doubtfully from property obviously uncared for, though half a day's work would remedy the causes. Who buys ill-fitting clothes, dusty, wrinkled and shop-worn, though of good material, when fresh garments cost no more? Would you?

This can be set right. Where in a town young and old have strong personal interest in local conditions and improvements, such things right themselves; but such tides are slow in rising.

Conversion into law of the understanding that a house and its grounds shall be left clean, and all rubbish removed by vacating tenants, would do much.

It would pay property owners to co-operate with real-estate agents in employing as "working inspector," a practical, energetic girl or woman, who could put herself, mentally, in the place of a prospective tenant, and see what needs attention—one able to drive a nail, put in a screw or use a paint-brush. Given a small sum to expend at discretion for scrub-woman, repairs, or the aid of a stout boy, vines would be fastened up or trimmed, gates hung, paint cleaned from floors, bricks replaced in walks, and airing freshen interiors. Bottles could be carted away and sold by the boy, who could sweep and pile neatly all lumber. Miss-

FOR STANCH HOSE—

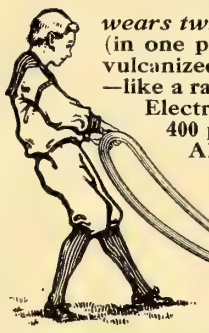
See the RED Trade-mark!

Every section of Electric Garden Hose (made in Wilmington, Delaware) is stamped with a *red* trade-mark. *Be sure to look for it.*

Twist Electric Hose. Pull it around sharp corners. Even tie it into a knot. You simply can't make it kink. In any position or any shape you get full pressure at the nozzle.

ELECTRIC GARDEN HOSE

(made in Wilmington, Delaware)



wears twice as long as ordinary hose. It is built in a series of woven jackets (in one piece) of high test cotton alternating with layers of fine grade rubber vulcanized into a solid seamless piece. (Common hose is wrapped with canvas—like a rag around a sore finger. It has no body. It won't wear.)

Electric will stand a higher water pressure than any other hose. 400 pounds won't burst it. Any length up to 500 feet.

Although Electric is the finest hose ever made it only costs a cent or two more than common. Get your seedsman or hardware dealer to show you the hose *and the trade-mark.*

Electric Hose & Rubber Company

Wilmington, Delaware

DON'T BE KNOCKED OVER

By Stenches from Backyard Debris

Why not look up the Stephenson Method, seven years on the market, and if satisfied protect the health of your family by installing **The Stephenson**

Underground Garbage Receiver

which removes all objections of the old swill-tub?

The Stephenson Underground Refuse Receiver for Ashes.
The Stephenson Underground Earth Closets for Camps.
The Stephenson Portable Metal House for Above.
The Stephenson Spiral Ribbed Ash Barrel, outwears two.

SOLD DIRECT

C. H. STEPHENSON, Manufacturer
21 Farrar Street Lynn, Mass.

WE MAKE THE PERMANENT KIND OF

RUSTIC WORK

that is thoroughly distinctive and which gives that artistic finish to the country place.

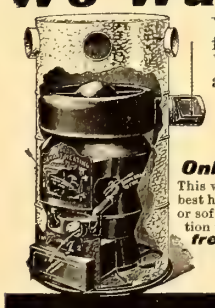
Rustic Tea Houses, Boat and Bath Houses, Arbors, Pergolas, Back Stops for Tennis Courts; Rustic Bridges for Ravines, Entrance Gates, Chairs, Tables, Flower Stands, etc., in fact, Rustic Work of every description.

Catalog and Sketches Sent upon Application

RUSTIC CONSTRUCTION WORKS, 33 Fulton Street, New York City

This Tea House on exhibition in our warerooms ready for immediate shipment

We Want To Tell You How



You can **save** not only the dealer's profits but his excessive charges for installation and repairs by dealing direct with the manufacturers. You can keep in your own pocket at least one-third the retail price of a heating plant. Let us tell you all about the

We Put Every Cent of the Dealers Profits into Your Pocket

Jahant Down Draft Furnace

Only $10 down and $10 per month, with freight prepaid east of the Mississippi River.

This wonderful furnace has proven its superiority above all others during the last ***30 years.*** It is without doubt the very best heating system for your home. It ***saves*** from ⅓ to ½ in fuel bills, because the patented "down-draft" burns hard or soft coal—wood or lignite—without cinders or clinkers, giving full heating value of every particle of fuel. Needs less attention than any furnace you ever saw. A strong "Guaranty Bond" goes with every Jahant, which allows you ***a 360 days free use of the furnace.*** You run no risk, as we supply special plans, full directions and give ***free all necessary tools,*** so that any man who can drive a nail can successfully install a Jahant.

No matter what make or system of heating you are considering, let us tell you more about the many conveniences and good points of our furnace; it's economy, it's healthfulness and how you can save money.

Write today for our book.

The Jahant Heating Co., 50 Howard St., Akron, Ohio.

Cottage Designs

By far the most complete collection of plans ever brought out. Illustrated with full-page plates. One dollar each. Sold separately.

MUNN & CO., PUBLISHERS, 361 BROADWAY, NEW YORK

No. 1. COTTAGE DESIGNS
Twenty-five designs, ranging in cost from $600 to $1,500.

No. 2. LOW-COST HOUSES
Upward of twenty-five designs, costing from $1,000 to $3,000.

No. 3. MODERN DWELLINGS
Twenty designs, at costs ranging from $2,800 to $7,000.

No. 4. SUBURBAN HOMES
Twenty selected designs, costing from about $3,000 upward.

The Beauty of Quarter-sawed Oak

is brought out to perfection by our process of making veneers and by the careful attention given to the finish of each and every door.

Cross section showing construction of 1⅜ inch door.

The name "*Morgan*" is branded on each door.

are perfect doors. Built of several layers with grain running crosswise, pressed together with waterproof glue, making shrinking, warping or swelling impossible. Veneered in all varieties of hardwood—birch, plain or quarter-sawed red or white oak, brown ash, mahogany, etc.

Morgan Doors are light, remarkably strong and absolutely perfect in every detail of construction. Each **Morgan Door** is stamped "*Morgan*" which guarantees quality, style, durability and satisfaction.

In our new book, "The Door Beautiful," **Morgan Doors** are shown in their natural color and in all styles of architecture—Colonial, Empire, Mission, etc., and it is explained why they are the best and cheapest doors for permanent satisfaction in any building. ***A copy will be sent on request.***

Architects: Descriptive details of Morgan Doors may be found in Sweet's index, pages 678 and 679.

Morgan Company, Dept. A, Oshkosh, Wisconsin.

Morgan Sash and Door Company, Chicago, Ill.
Morgan Company, Oshkosh, Wisconsin. Morgan Company, Baltimore, Maryland.

CEMENT

Its Chemistry, Manufacture & Use

Scientific American Supplement 1372 contains an article by A. D. Elbers on tests and constitution of Portland cement.

Scientific American Supplement 1396 discusses the testing of cement.

Scientific American Supplement 1325 contains an article by Prof. William K. Hatt giving an historical sketch of slag cement.

Scientific American Supplements 955 and 1042 give good accounts of cement testing and composition, by the well-known authority, Spencer B. Newberry.

Scientific American Supplements 1510 and 1511 present a discussion by Clifford Richardson on the constitution of Portland cement from a physico-chemical standpoint.

Scientific American Supplement 1491 gives some fallacies of tests ordinarily applied to Portland cement.

Scientific American Supplements 1465 and 1466 publish an exhaustive illustrated account of the Edison Portland cement works, describing the machinery used.

Scientific American Supplement 1519 contains an essay by R. C. Carpenter on experiments with materials which retard the activity of Portland cement.

Scientific American Supplement 1561 presents an excellent review by Brysson Cunningham of mortars and cements.

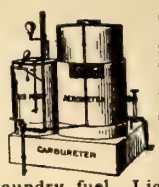
Scientific American Supplement 1533 contains a resumé of the cement industry and gives some valuable formulae.

Scientific American Supplement 1575 discusses the manufacture of hydraulic cement. L. L. Stone is the author.

Scientific American Supplements 1587 and 1588 contain an able paper by Edwin C. Eckel on cement material and industry of the U. S.

Any one of these Supplements will be sent for 10 cents. The entire set costs $1.60, and constitutes an invaluable text book on the subject. Order from your Newsdealer or from

MUNN & COMPANY, 361 Broadway, New York



Country Homes

may enjoy city comforts and conveniences *at less cost* than Kerosene, Acetylene or Electricity, with none of their dangers, by using the ***Automatic***

Economy Gas Machine

Produces light, kitchen and laundry fuel. Lighted the same as electric, but without batteries. Write for booklet, "*The Economy Way.*"

ECONOMY GAS MACHINE CO., Sole Mfrs.,
437 Main Street Rochester, N. Y.

WIZARD BRAND
1 BARREL EQUALS
4 WAGON LOADS
STABLE
MANURE

Sheep Manure

Kiln dried and pulverized. No weeds or bad odors. Helps nature hustle. For garden, lawn, trees, shrubs, fruits and house plants.

$4.00 LARGE BARREL, Cash with Order. Delivered to your Freight Station.

Apply now.

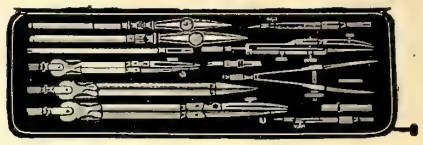
The Pulverized Manure Co., 21 Union Stock Yards, Chicago.

St. Louis, Mo. Baltimore, Md

F. Weber & Co.

1125 Chestnut St., Philadelphia, Pa.

Architects' and Engineers' Supplies



"FABRIANO" Hand-Made Drawing Papers
Superior to any other hand-made paper
F. Weber & Co.'s Illustration Boards, Air Brushes and Materials

STANDING SEAM ROOF IRONS

CLINCH right through the standing seam of metal roofs. No rails are needed unless desired. We make a similar one for slate roofs.

Send for Circular

Berger Bros. Co.

PATENTED PHILADELPHIA

BRISTOL'S RECORDING THERMOMETERS

make continuous records of atmospheric temperatures, and are designed for both indoor and outdoor temperatures. Send for new catalogues.

THE BRISTOL COMPANY, WATERBURY, CONN.
NEW YORK *Branches* CHICAGO

JUST PUBLISHED

THIRD EDITION OF

KIDDER'S Churches and Chapels

By F. E. KIDDER, Architect

This edition has been thoroughly revised by the author, and enlarged, many new designs being added, including several new designs for Catholic churches. There are 120 illustrations in the text and more than **50 full-page plates.** The book contains a large number of plans and perspectives of churches of varying costs. Besides this there is much concise and practical information relating to planning and seating; details of Construction, Heating and Ventilation, Acoustics, etc., making it in its present form

The Best American Book on Church Design and Construction

One oblong quarto volume. Price, net, $3.00

Munn & Co., 361 Broadway, New York City

ing shutters would be washed and hung, hinges being replaced here, as elsewhere.

Broken porch and steps once attended to by the owner, the brown cottage would show most improvement for time expended. Should our home-seeker again visit it, she would find clean-swept floors, no traces of rubbish on shelves or in any remote cupboard, and the lighting of the rooms, an amazing factor in their appearance, would have been altered by simply closing upper shutters and opening the lower ones, tempering the glare and giving all a friendly look, tempting her into plans for placing her furniture and allotting rooms.

A girl with tact and enterprise would contrive the nailing down of that loose board on the street crossing, coax the postmaster to mend his sign, and persuade the vacant lot's owner to give its use to a tennis club, on condition that it be put and kept in order. She would certainly propose advertising the home town real estate in the religious weeklies and charming new suburban magazines, rather than in city newspapers. She might even organize a crusade of neatness to shame residents unwilling to join the forward movement, knowing that if surrounded on all sides by trim-kept premises, they must find their uncared-for abodes far too prominent.

Good leaven set to work, the home town will realize that neglect cheapens all property —that anything worth having is worth caring for. Co-operation in small ways can be arranged. Boards lying around, a nuisance to one man, may be what his neighbor needs for urgent repairs. Vines and seedlings thinned from one garden will almost stock another. An exchange of work for materials, through come central committee, would eliminate personal obligation, and would not be entirely unfeasible were common sense used.

Rank heresy, to suggest that for the cost of erecting one flimsy flat, a whole village could be "tidied up" and made attractive; yet it is true. Consider the fact at leisure.

One last morsel of warning. In planning reforms make wise choice of tools. A "new broom" will at once begin to "sweep clean," but a "new towel" may take much hard rubbing before "wiping dry." On such trifles will depend the ultimate victory of the home town.

Wall Papers and Wall Coverings

A PRACTICAL HANDBOOK

for Decorators, Paperhangers, Architects, Builders and House Owners, with many half-tone and other illustrations showing the latest designs

By ARTHUR SEYMOUR JENNINGS

EXTRACT FROM PREFACE

THE author has endeavored to include characteristic designs in vogue today, and to give reliable information as to the choice of wall papers as well as to describe the practical methods of applying them. In dealing with matters concerning decoration there is always the danger of leaning too much toward an ideal and of overlooking the practical requirements of commercial life. The author hopes that he has been successful in avoiding this fault, and that his book will be regarded as both practical and useful.

One Large 8vo Volume, Cloth. $2

MUNN & CO., 361 Broadway, NEW YORK

Accurate information regarding THE WORLD'S INDUSTRIAL PROGRESS is a necessity of MODERN BUSINESS LIFE, as well as a subject of ABSORBING INTEREST for every thinking man and woman.

For nearly sixty-five years the

Scientific American

has been the most widely quoted authority on all matters relating to the progress made in the fields of discovery, invention and scientific news.

Free from dry technicalities, it tells the story of the WORLD'S PROGRESS in a fascinating and practical manner, which makes its weekly visits welcome to the entire family. It is unique among periodical literature because it contains authoritative information which cannot be obtained from any other source.

Subscription price, $3.00 per year.

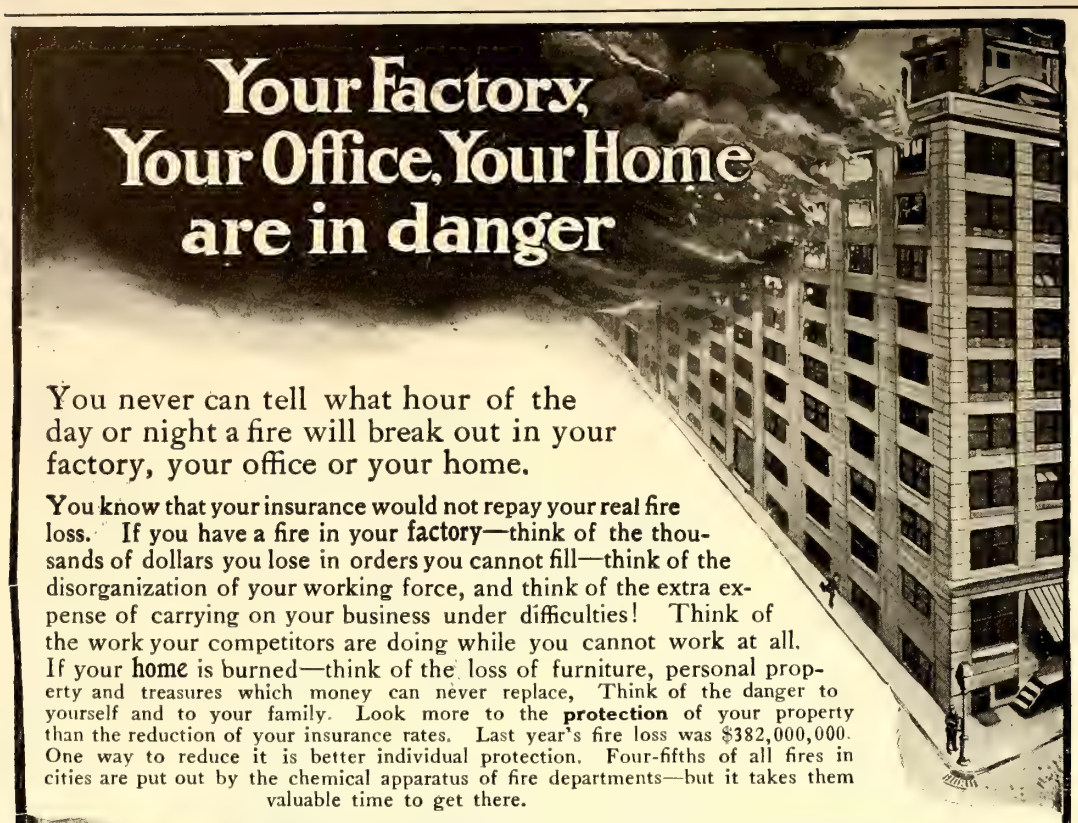
The Season's Best Club Combinations

Scientific American or American Homes and Gardens	$3.00	$4.45
Review of Reviews	3.00	
	$6.00	
Scientific American or American Homes and Gardens	$3.00	$6.80
Review of Reviews	3.00	
World's Work	3.00	
Everybody's Magazine	1.50	
	$10.50	
Scientific American or American Homes and Gardens	$3.00	$5.35
Everybody's Magazine	1.50	
World's Work	3.00	
	$7.50	
Scientific American or American Homes and Gardens	$3.00	$5.35
McClure's Magazine	1.50	
Review of Reviews	3.00	
	$7.50	
Scientific American or American Homes and Gardens	$3.00	$5.10
World's Work	3.00	
Delineator	1.00	
	$7.00	
Scientific American or American Homes and Gardens	$3.00	$4.60
McClure's Magazine	1.50	
Woman's Home Companion	1.25	
	$5.75	

After February 1st, 1909, 25c. must be added to combinations including Woman's Home Companion.

MUNN & CO., 361 Broadway, New York City

Your Factory, Your Office, Your Home are in danger



You never can tell what hour of the day or night a fire will break out in your factory, your office or your home.

You know that your insurance would not repay your real fire loss. If you have a fire in your **factory**—think of the thousands of dollars you lose in orders you cannot fill—think of the disorganization of your working force, and think of the extra expense of carrying on your business under difficulties! Think of the work your competitors are doing while you cannot work at all. If your **home** is burned—think of the loss of furniture, personal property and treasures which money can never replace, Think of the danger to yourself and to your family. Look more to the **protection** of your property than the reduction of your insurance rates. Last year's fire loss was $382,000,000. One way to reduce it is better individual protection. Four-fifths of all fires in cities are put out by the chemical apparatus of fire departments—but it takes them valuable time to get there.

BADGER'S 40-Gallon Chemical Engine

It will give you your own fire protection—your own efficient fire department—a fire equipment capable of immediate action—more effective than thousands of pails of water.

The Badger 40-Gallon Chemical Engine is built to meet the requirements of the National Board of Fire Underwriters and bears the *inspection label* of the Underwriters' Laboratories. It not only comes up to the Underwriters' standard of efficiency, but is the best built engine of its size on the market. Ask your Insurance Broker and he will verify just what we say.

This is of vital importance and demands your careful consideration when buying fire extinguishers on which depend the saving of your property—the saving of life.

The Badger Chemical Engine gives you a most effective private fire department. It has a narrow tread and will go through any three foot opening. It throws a stream 75 to 85 feet sufficient to extinguish all incipient and many well started fires. It is more effective in extinguishing a blaze than thousands of gallons of water. In fact, it puts out oil and gasoline fires which water would spread, and extinguishes fires which water could not reach—due to the chemical action of the engine in generating a gas which acts as a blanket on the fire. Does not flood premises with water and cause additional loss. Stream can be instantly stopped by shutting off the nozzle. Operated easily by one man. Requires no experience. Costs practically nothing to maintain. All chemicals necessary are sold at any drug store.

FREE Trial Offer

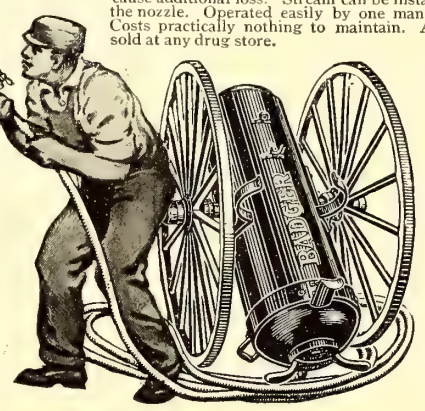
This is our offer. We will ship you an engine, with two chemical charges, freight prepaid, and allow you 30 days' free trial. If it does not meet your requirements, you can return it to us at our expense. This enables you to build test fires as large as you like and satisfy yourself absolutely of its efficiency before you pay for it. Cut off the attached coupon and mail to us, and we will send you descriptive catalog J, price lists and all information on this free trial offer.

Badger Fire Extinguisher Co.
32 J Portland St., Boston, Mass.

Please send me booklet J and all details of your free trial offer.

Name _____

Address _____



STOP THE FIRE WHEN IT STARTS

We Make All Kinds

This Shows our 3-Gallon Extinguisher

BADGER FIRE EXTINGUISHER CO. 32-J Portland St., Boston, Mass.

516 Pages, 107 Engravings NOW READY *Price, Four Dollars*

Industrial Alcohol

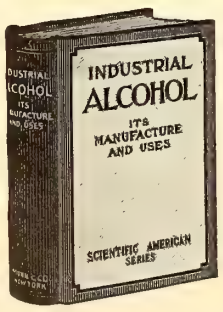
ITS MANUFACTURE AND USES

A Practical Treatise based on Dr. Max Maercker's "Introduction to Distillation" as revised by Drs. Delbrück and Lange

COMPRISING

Raw Materials, Malting, Mashing and Yeast Preparation, Fermentation, Distillation, Rectification and Purification of Alcohol, Alcoholometry, The Value and Significance of a Tax-Free Alcohol, Methods of Denaturing, Its Utilization for Light, Heat and Power Production, A Statistical Review, and the United States Law

By JOHN K. BRACHVOGEL, M.E.



THE value and significance of a tax-free alcohol have been so widely discussed in the press and periodical literature of the entire country, that it is unnecessary to emphasize the great importance of the subject, especially to our agricultural and industrial interests. For years we have been far behind the nations of Europe in this regard, and in consequence our literature has been sadly lacking in authoritative works covering this phase of industrial activity. This book was designed with the especial purpose of filling this want, and it is the latest and most comprehensive work of its kind which has been published in this country.

Few in number are those to whom this book would not prove of interest and value. The farmer, the manufacturer, the power-producer, the householder, will all find that denatured alcohol is of such importance to them, that its use and introduction will effect savings and economies which were hitherto impossible of accomplishment.

FOR SALE AT ALL BOOKSTORES

OVETT'S PEONIES

Roots Guaranteed to have 2 to 6 eyes

Cost practically no more than single-eye slips, will bloom at least a year earlier. "It is what you *get* that counts"—plant Lovett's Peonies now, and you will have a pleasing show of flowers next May and June.

WRITE TO-DAY

Free Peony Leaflet in colors, containing full descriptions of best varieties and attractive special offers.

J. T. LOVETT, Box 127, Little Silver, N. J.

Take off your Hat to the MYERS

Write for Circulars and Prices to F. E. Myers & Bro. Ashland, Ohio

THE PUMP THAT PUMPS | HAY TOOLS | BARN DOOR HANGERS HAY RACK CLAMPS

ANTIQUES

I have a very large stock of Old China, Old Mahogany Furniture, Brasses, Coppers, Pewter, Antique Jewelry, etc. My twenty-page catalogue quotes descriptions and prices. Sent to any one interested in Antiques.

ADA M. ROBERTS
Box 63, WASHINGTON NEW HAMPSHIRE

144 Sunlight Sash—lettuce and violets

Stronger earlier plants

Results so remarkable compared with single glass sash that gardeners double their orders. The present company is 18 times larger than when it started 2 years ago, solely because the sash makes good.

Light penetrates the glass raising temperature of bed on coldest days to a good growing warmth. Practically none of the warmth escapes at night because the dry air between the two layers of glass is the best non-conductor there is; better than mats and boards and costs less. Never has to be covered.

Plants *need* light, the more of it, the better. Sunlight Sash lets in the light *all the time*. Almost every kind of vegetable or flower has been grown under Sunlight in all sorts of weather and temperature. *You* get better results, stronger earlier plants.

Professional gardeners, State Agricultural Stations, Colleges of Agriculture; everywhere use and recommend it.

The principle on which it is built

Heat rays follow light rays. Two layers of glass instead of one; between layers a five-eighths inch cushion of air. No putty; panes are lapped and by an ingenious device held close to wood, can't possibly work loose.

Write for catalogue and freight prepaid proposition.

Order early to insure prompt shipment. Fast freight, safe delivery guaranteed. Write to-day. *Prepare for cold frames.*

SUNLIGHT Double Glass Sash TRADE MARK
for Hot-beds and Cold-frames

SUNLIGHT DOUBLE GLASS SASH CO., [INCORPORATED]
943 East Broadway, Louisville, Ky.

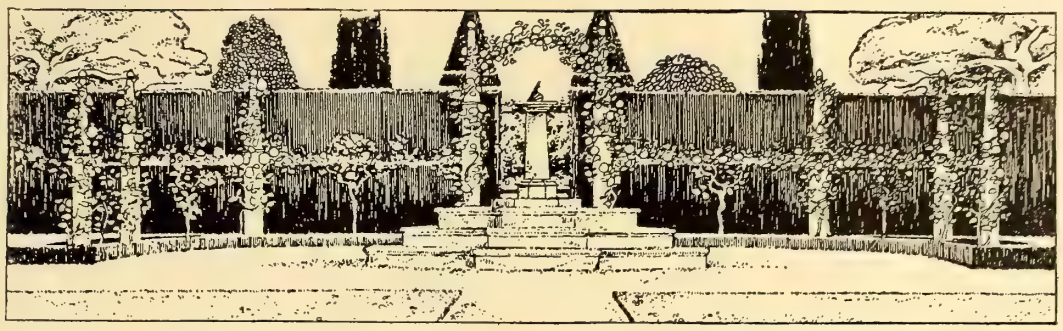
BOOKS

RELATING TO
Architecture
Decoration
Furniture Rugs
Ceramics, etc.

will be recommended and supplied by our well equipped Book Department.

MUNN & CO.
361 Broadway
NEW YORK

The Garden in Your Town



IS it a success? If so, the Garden Competition Editor of American Homes and Gardens wants to know about it—he will pay $200 in prizes for the five best-planted, developed and successful suburban or village gardens. Write to the Garden Competition Editor and tell him how you planted your garden and what success you had with it; tell him of the plants with which you have had the best results, and also those which have been failures. Send him a good photograph and a plan of the garden. *We want you to help us so that we may help others to beautify their surroundings. You need not be a skilled writer to tell a story of your garden success. Tell it in your own way.*

$200 for Prizes

For the best garden received we will pay:

For the First, - - -	$100.00
For the Second, - -	50.00
For the Third, - -	25.00
For the Fourth, - -	15.00
For the Fifth, - - -	10.00

Conditions

Competitors for the prizes must comply with the following conditions:

1. A general description of the garden, giving the size of the plot and the kind of plants used in planting.
2. Drawings of the plot are to be made, preferably on a scale of eight feet to the inch, showing the positions of the various plants and shrubs.
3. Photographs of the garden are to be sent printed on solio paper and should not be less than 5 x 7 inches in size. If possible to do so, please also send a photograph showing the garden before planting.
4. Descriptions, photographs and drawings are to be marked with a pseudonym, which is to be enclosed in a sealed envelope containing the name and address of the competitor. As soon as the judges have decided upon the five best gardens they will notify the Editor, who will open the envelope bearing the proper pseudonym and containing the competitor's true name. The competitor will be notified by the Editor that he has won the prize.
5. The Garden Competition Editor reserves the right to publish in American Homes and Gardens all gardens which in the opinion of the judges are worthy of honorable mention. The names of those whose gardens are reproduced will be published with the photograph.
6. Contributions are to be submitted to the Garden Competition Editor, American Homes and Gardens, 361 Broadway, New York.
7. The Garden Competition closes September 15, 1909. Contestants need not be subscribers to American Homes and Gardens, and no charge or consideration of any kind is required. *No photographs, manuscripts or plans will be returned.*

BURLINGTON Venetian and Sliding BLINDS

Venetian Blind for inside window and outdoor veranda. Any wood; any finish to match trim.

SCREENS AND SCREEN DOORS

¶ Equal 500 miles northward. Perfect privacy with doors and windows open. Darkness and breezes in sleeping rooms.

Sliding Blinds for inside use. Require no pockets. Any wood; any finish.

WRITE FOR OUR CATALOGUE, PRICE-LIST AND PROPOSITION TO YOU

BURLINGTON VENETIAN BLIND CO., 975 Lake St., Burlington, Vermont

How Much Happiness

will you give to sufferers in dark hot tenements, by sending them to

Sea Breeze

our Fresh Air Home, and the hospital for tuberculous children, where Smiling Joe was cured?

$10 sends 4

for a whole week of sweet cool air, good food, games and invigorating ocean bathing.

"If you lived in our dark basement you would know why we want to go to Sea Breeze."

"It's more fun to be a 'little father' at Sea Breeze than to run with the gang on Ave. A."

HOW MANY MAY WE SEND AS YOUR GUESTS?

$2.50 will give a whole week of new life and cheer to a worn out mother, an aged toiler, an underfed working girl, or a convalescing patient.
5.00 gives a teething baby and its "little mother" of ten a cool healthful week.
10.00 gives four run-down school children a fresh start for next year.
25.00 names a bed for the season. $50.00 names a room.
100.00 gives a happy excursion to 400 mothers and children—for many their only outing.

Can you not have a lawn party or an entertainment for Sea Breeze?

Please send your gift to R. S. MINTURN, Treasurer, Room 24, No. 105 E. 22nd St., New York

N. Y. ASSOCIATION for IMPROVING the CONDITION of the POOR
R. FULTON CUTTING, President

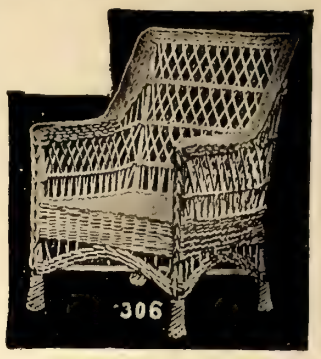
"My little girl had measles and then pneumonia. The doctor says two weeks at Sea Breeze might have saved her."

To how many other such children will you help us give a fighting chance before it is too late? $5.00 will do it for one.

"It's easy to get well at Sea Breeze. It kept me from losing a whole year at school."

"Willowcraft"

is the only durable line of **WILLOW FURNITURE** made in the United States. We are the manufacturers, and will send this sample chair for $7, fgt. prepaid, anywhere east of the Mississippi River, Write for our catalogue of 150 other patterns.



The Willowcraft Shops
Box A NORTH CAMBRIDGE, MASS.

Van Dorn Iron Works Co.

PRISON, HOUSE & STABLE WORK

JOIST HANGERS
LAWN FURNITURE
FENCING, ETC.

CLEVELAND, OHIO

SPECIAL OFFER to Carpenters

BUILDERS AND OWNERS OF HOMES

IVES PATENT WINDOW VENTILATING LOCK. A Safeguard for Ventilating Rooms. Pure Air, Good Health and Rest Assured.

To introduce this article, Four Ventilating Locks in Genuine Bronze, Brass or Antique Copper Finish will be mailed to any address prepaid for One Dollar. Will include a forty page Hardware Catalogue and Working Model to carpenters who wish the agency to canvass for its sale. Address

PATENTED

The H. B. Ives Co. NEW HAVEN, Conn., U.S.A.

Study Architecture

EASY LESSONS
OR, STEPPING STONE TO
ARCHITECTURE

By THOMAS MITCHELL

A SIMPLE TEXT-BOOK telling in a series of plain and simple answers to questions all about the various orders as well as the general principles of construction. The book contains 92 pages, printed on heavy cream plate paper and illustrated by 150 engravings, amongst which are illustrations of various historic buildings. The book is 12mo in size, and is attractively bound in cloth.

PRICE FIFTY CENTS, POSTPAID

Munn & Co., 361 Broadway, New York

The Scientific American Boy

By A. RUSSELL BOND. 320 pages, 340 illus. $2.00 postpaid

A STORY OF OUTDOOR BOY LIFE

¶ Suggests a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. Complete practical instructions are given for building the various articles, such as scows, canoes, windmills, water wheels, etc.

MUNN & CO., Publishers, 361 Broadway, NEW YORK

American Homes and Gardens for October

"Willow Brook House"

The "Notable Home" of the number is the fine estate of Francis E. Bond, Esq., at Penllyn, near Philadelphia. It is a house of deep interest, designed by Mr. Horace Trumbauer, and is beautifully situated in a woody spot It is a house that shows, both in design and in situation, a singularly successful unity that is at once delightful and satisfying. The descriptive text by Barr Ferree is entirely adequate, while the numerous photographs have been expressly taken for this Magazine.

A Concrete Garden Bench

Ralph C. Davison, whose series of articles on concrete ornaments for the garden and how to make them is so auspiciously begun in the present issue, takes up a new object of art and utility interest in his second paper, which describes how to make a garden bench of concrete. Mr. Davison writes in the most practical manner possible, tells the reader just what to do and how to do it. His articles are illustrated with an abundance of illustrations and diagrams and are thoroughly practical and helpful in every way.

The Decorative Value of Carrots.

How the common carrot may be transformed into a handsome object of house decoration is delightfully told by S. Leonard Bastin in a paper that shows how cleverly this ordinary vegetable may be utilized in this way. Lovers of attractive house plants will gain some suggestive ideas from this paper and at the same time learn how they may equip their houses with charming examples of plant growth.

Floral Clocks

The extremely novel topic of floral clocks is discussed by Charles A. Brassler. The author tells all about floral clocks, how they are made, the intricacies of their mechanism, where they have been most successfully carried out and other data of the most interesting kind. Floral clocks, while not novelties, are most decided rarities, and the present paper is practically unique. The illustrations include photographs from a rich collection of floral clocks, most of which will be completely new to our readers.

The Modern Country House

The modern country house is ably discussed by Francis Durando Nichols in an illuminating article illustrated with many original photographs of houses of moderate size and cost. The author discusses some of the more important aspects of recent house design, and illustrates his paper with numerous illustrations of a group of recent houses. The floor plans and interiors render this paper particularly helpful and suggestive.

An Arts and Crafts Colony

The Whitehead Colony of Arts and Crafts in the Catskills is the subject of an important article by Poultney Bigelow, the well-known critic and historian. Mr. Bigelow's article is as interesting as the illustrations, which are unusually numerous and which show in detail many of the interesting bungalows built in this delightful camp. It is a true city of the forest and possesses many inherent charms of its own.

A House of Estimated Cost

A two-story house of the bungalow type, designed by Mr. William Albert Swasey, architect, of New York, is offered with an estimate of its cost within certain specified limitations. It is an interesting house, well planned and designed in an attractive manner. It is a design bound to win friends.

Furnishing the Nursery

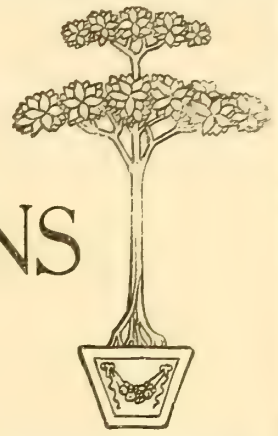
The furnishing of the modern nursery has now become so important a part of the equipment of the modern house that some suggestive ideas on this highly important topic will be welcomed. Edith Haviland offers a number of helpful suggestions on this fascinating subject. The paper is richly illustrated with many novel photographs.

The Departments

The regular departments of the number, Monthly Comment, Correspondence, and Garden Talk are filled, from beginning to end, with helpful ideas and suggestions and are, in many respects, the most useful portions of the Magazine. These departments are always fresh and new, and present the very last word in their respective subjects.

IT EATS DIRT
Invincible
Electric Renovator
IT EATS DIRT
The
one perfect air-
cleaning machine
Cleans everything without removal of a single article.
Dustless—almost silent.
Portable—easily operated by anyone.
Not a toy—gives a life-time of service.
Proven by years of success.
Do not experiment. Let us demonstrate for you.
The "INVINCIBLE" is made in three styles:—for the home; for the mansion; for large office and public buildings.
Write for free illustrated booklets.
ELECTRIC RENOVATOR MFG. COMPANY
Address Dept. F for the "Two Booklets"
934 FARMERS BANK BUILDING, PITTSBURG, PA

AMERICAN HOMES AND GARDENS



Price, 25 Cents. $3.00 a Year

CONTENTS FOR SEPTEMBER, 1909

PAGE

In the Cool of the Summer's Woods 334
Monthly Comment—The Village Workman 336
Notable American Homes—"Firenze Cottage," the Summer Home of Daniel Guggenheim, Esq., Elberon, New Jersey ..... *By Barr Ferree* 337
A Swimming-Pool for Private Gardens ..... *By Lawrence Eden* 341
Trellises ..... *By C. C. Grant* 343
Vacation Home-Making ..... *By Edith Haviland* 347
L'Art Nouveau Houses in Austria ..... *By Ralph de Martin* 350
Birds and the Country Home ..... *By E. P. Powell* 353
A Group of Bungalows at Pasadena, California, Costing from Fifteen-Hundred Dollars Upwards 354
Photographing Birds ..... *By B. S. Bowdish* 356
Concrete Ornaments for the Garden and How to Make Them. I.—A Garden Vase. *By Ralph C. Davison* 359
A Colonial Suburban Home—Guaranteed Cost $6,000 .. *Designed by Walker & Hazzard* 362
"Weldacre," the Home of George E. Smith, Esq., Philips Beach, Massachusetts. *By Josephine Balche* 364
Do Plants Think? ..... *By Percy Collins* 369
Garden Notes xiii
Correspondence:
Problems in Home Furnishing ..... *By Alice M. Kellogg* xiv
Garden Work About the Home ..... *By Charles Downing Lay* xiv

Home-made Tools for the Amateur Gardener.
The Home Town. The Use of Wall-paper.
New Books.

Combined Rate for "American Homes and Gardens" and "Scientific American," $5.00 per year
Rate of Subscription of "American Homes and Gardens" to foreign countries, $4.00 a year
Rate of Subscription of "American Homes and Gardens" to Canada, $3.50 a year

Published Monthly by Munn & Company, Office of the "Scientific American," 361 Broadway, New York

CHARLES ALLEN MUNN, President - - - - FREDERICK CONVERSE BEACH, Secretary and Treasurer
361 Broadway, New York 361 Broadway, New York

[Copyright, 1909, by Munn & Company. Registered in U. S. Patent Office. Entered as second-class matter, June 15, 1905, at the Post Office at New York, N. Y., under the Act of Congress of March 3, 1879.]

NOTICE TO CONTRIBUTORS—The Editor will be pleased to have contributions submitted, especially when illustrated by good photographs; but he cannot hold himself responsible for manuscripts and photographs. Stamps should in all cases be inclosed for postage if the writers desire the return of their copy.

IN THE COOL OF THE SUMMER'S WOODS

AMERICAN HOMES AND GARDENS

Volume VI September, 1909 Number 9

"Firenze Cottage": the Pompeian hall

Monthly Comment

The Village Workman

IN THOSE strange works of fiction, the guides to country living, which many philanthropically disposed persons are putting upon the literary market with a bravery worthy of a better cause, the village workman has a place wholly his own. He occupies, as it were, a niche of universal convenience, and is able to do anything at any time and in the most excellent way. It is time that a word of caution should be spoken on this theme, for, among the disillusions that sometimes come to too-sanguine souls seeking to worship nature and enjoy the simple life in the country, none is more unexpected than the shattering of the legends with which busy writers have for years idealized and surrounded the country workman and his labors.

THE country workman of the books is a legendary figure, no truer to life than excellent old Rip Van Winkle. Modern research has shown on what flimsy basis many of the finest of old legends rests, but it requires no research at all to demonstrate that the country workman of the books, or the country workman of any sort, is a very human being, with a multitude of failings and deficiencies of his own that could make him a study of abounding interest were his vagaries not practised at your expense and his peculiarities not devoted to your own undoing. Each year his legendary character moves farther and farther into the background; each year he becomes more of a trial and more of an expense. You pick up your copy of "How to Make Ten Thousand Dollars in Ten Thousand Years on One Thousand Square Feet of Ground," and you read with amazement the numberless ingenious things the author had done for her, and then you go out and look at some of the strange things that have been done for you by the only available workman within miles. You wonder that such things can be, and you are most particularly sorry that they happen to be yours.

THE newcomer establishing himself in the country naturally requires some outside assistance. It is a need that can not be dispensed with, for there are many kinds of work about a place, old or new, that the most ingenious man can not do, even if his time were completely at his disposal. To the unsophisticated it would seem the easiest thing in the world to get some one to "help" if not to completely carry out a piece of work. The books and magazines teem with experiences of obliging neighbors or skilled geniuses of labor that have lived sheltered lives in the unappreciative countryside. One of the chiefest joys of country living, it would seem, was the engaging of these conveniently at hand and most ingenious persons. To look for one of these chaps is apt to be the first step in the disillusionment of country life, the first step toward reality, the step from out of the clouds of what may be right down onto the solid earth of reality.

A VERY shrewd observer once wrote an interesting essay beginning with a reference to first catching your hare. It was a profound thought, and if it happens to occur to you at this juncture you can not but wonder if he ever tried to find a workman in the rural districts. To those who have not met with the experience it may seem strange, yet it is completely true, that there are many regions quite near to some of our largest cities in which not a single workman or helper can be had for any price. This is a condition that is not only existant at times, but has been prevalent indefinitely and with no signs of relief in progress. There is a real cause for this, since for many years there has been a steady drain of the country youth to the cities and in many country regions there is scarce any one left save the older men who, too late in life, have come to see that the real thing to do is to swagger into town with kid gloves and a cigarette and engage in a cheap clerkship in a city house.

WHEN a country workman is finally captured a new series of experiences begins. He may, as a matter of fact, be no worse than any average city workman. The real hardship lies in his scarcity. In the city, if one does not exactly care for the particular man engaged for a certain job, there are many others, apparently as available as the one you have picked out. But in the country you are fortunate if you find one man to do your work, and having found him you presently discover there are no others; or, if there be others, they are endowed with various qualifications that make them more uncertain than the one you have been fortunate enough to obtain. The number of persons following special trades being limited, the number of people who can be hired for anything being restricted, one must put up with what one can obtain, and the results are often very disastrous. You get inefficient work and you are practically without redress, for there is no one else who could do better.

DAY work is highly in favor in the country. Miscellaneous jobs are always difficult to figure on in lump sums, and it is often convenient to have people working for you by the day, moving them around from job to job as one is finished or new ones present themselves. Moreover, in day work the country workman is sure not to lose money. He may have underestimated his contract price, the work may have been more difficult than he anticipated; but with day work it can be strung right along and finished in a profitable manner. It is a delightful method, and works beautifully for every one except the unfortunate who is to pay the bill. Rebates and reductions are even more unfavorably regarded than in town, the proper thing being to pay the bill as rendered, even though it contain monstrous overcharges and extras. The reason for this is obvious: the person presenting the bill has a larger local acquaintance than you have; moreover, he knows every one else who makes out bills. As rendered his bill is eminently just and fair and ought to be paid; if it is not paid with the exactness with which it is rendered, the bill-maker tells everybody else, and before you know it you have no credit whatever in a community you once thought to live in peacefully and at ease, meeting all your just debts, and incurring no more expense than you can.

IF you don't mind the expense you will often find the village workman a most agreeable fellow. Life in the quiet countryside has sharpened his wits and aided his memory. The latter will be prodigious, and he can tell you all about everyone else and many diverting adventures that he himself went through at some remote epoch of his career. Perhaps this entertainment should be paid for, and if the stream of talk could be turned off as readily as it is turned on the village workman might be a very entertaining person to have around. His ways of doing business are not your ways; a pleasant day or a chance at fishing may interrupt your job with no other reason, but in one respect he is thoroughly modern and up-to-date; he knows how to charge, and he is fully alive to the merits of an astounding bill.

A summer cottage of wood painted white, with green blinds, set in artistic shrubbery

Notable American Homes

By Barr Ferree

"Firenze Cottage," the Summer Home of Daniel Guggenheim, Esq., Elberon, New Jersey

THERE is an abundance of interest at "Firenze Cottage," a fine house, splendid grounds, an immense assemblage of flowers and plants, a grotto so large and extensive that it might well be called unique. One does not grasp all these items at once, for the property is a considerable one, and has been laid out and developed in such a way that the very utmost use is made of every part of it. Moreover, the various external features are quite well separated; each part is distinct in itself, with a convincing character of separateness; yet each part is manifestly a portion of a single whole, in which each individual element makes its own contribution to the final effect.

"Firenze Cottage" does not directly overlook the ocean; that is to say, it is on the land side of Ocean Avenue. But the space opposite is practically bare of buildings, and the ocean is not, therefore, hidden from the entrance front. The general external character presented to the passer-by is one of distinguished charm. The house is placed well back, with a spacious lawn before it. It is somewhat irregularly bordered with evergreens, and all around the outer borders, on the two sides, and within the bounding wall, closing the entire front area as seen from the entrance porch, is a thick planting of trees, shrubs and plants, the cannas being particularly notable among the last. It is a splendid enclosure, brilliant and dense, giving the place within a distinct separation from the surrounding properties, and affording the spectator without many a pleasurable glance at the beauty of this embowered lawn.

The front of the house shows two wings with a connecting center. Its length is increased by two outer porches, one at each end; one serves as the porte-cochere; the other, as a tea-room. Both house and porches have broadly projecting cornices, which form a distinctive feature of their design; those of the house are supported on large brackets, those of the others, by medallions. The whole of the front is contained within a terrace, surmounted with a balustrade; at the entrance steps are two seated lions holding shields. Within is a porch, filling the space between the two wings, a porch of coupled columns and a simple balustrade which encloses the upper platform. The windows of the upper story extend into the broad cornice which crowns the house, and above are the sloping roofs, sharply inclined, with low dormers in the center, and giving an agreeable silhouette and finish to the whole design.

The main hall is entered directly from the porch without the intervention of a vestibule, for this is, of course, a summer home, not used in the winter months. It is an immense room in the Pompeiian style, much the largest room in the house, and an apartment superbly hospitable in dimensions. A row of coupled Roman Ionic columns across the farther side divides it into two unequal parts, the larger of which is nearer the doorway, while the narrower portion has somewhat the character of a corridor. It is, however, an essential part of the hall, all of which is decorated in a harmonious style. The walls have channeled pilasters corresponding in style to the columns. The base is painted as a dark dado, above which is a Pompeiian decoration in color. The cornice is white, picked out with light green, and the light blue ceiling is without decoration. The bases of the columns and pilasters are Pompeiian red and the channels white and green. The floor is of white marble with a border in colored marbles; it is partly covered with rugs and skins.

The mantel is directly in face of the entrance door, and is in the corridor-like division of the hall. It is of yellow marble, with green and yellow mosaic facings. On the keystone is an antique grotesque bronze masque. The andirons are green bronze. The furniture is modeled after Pompeiian designs, with frames of wood, painted white, and

The graceful willow is abundantly used

movable cushions of green. A superb marble table stands in the center, and behind it is a fountain rising from a pool let into the floor. The palms and ferns which are banked on either side of it add greatly to its effectiveness. There are numerous reproductions of Pompeiian bronzes, and Pompeiian designs and motifs have been used wherever possible.

The library is on the left of the hall. Its walls are lined with red silk damask. The woodwork, which is confined to a low wainscot, the frames of the doors and windows, and the broad cornice, is Circassian walnut. This wood is also used for the mantel, the space above which is filled with a magnificent matched panel of the same beautiful wood. The mantel has facings of grayish marble and green and brass andirons. Just before it are two benches or seats, one on each side, which form a little space like an inglenook, and contains a tea-table, cosily placed for agreeable intercourse. There is a vast red rug on the hardwood floor, the furniture covering is red leather, and the windows have thin white curtains.

On the left of the hall is the music-room, which faces the entrance front. It is an oval apartment, very delicately designed and furnished. The walls are of light yellow, with a low wood wainscot painted white, and a painted festooned design, which includes small figured medallions. The mantel is of carved wood with a painting included in the decoration of the room above it. The curtains are sage green, with lambrequins, all with white borders. The hardwood floor has a green rug, and in the center of the ceiling, which otherwise is perfectly plain, is a rich decoration in low relief. The furniture is mahogany and gilt cane. A finely embroidered cope hangs over the back of the upright piano.

Behind this room, on the inner side of the house, but entered from the main hall, is the dining-room. This is a somewhat long room of very agreeable dimensions The walls are in stripes of two shades of green. The wood is mahogany and is used in the low wainscot, the door and window frames, the broad cornice and the mantel and its over-panel. There are white curtains at the windows, and the room is, therefore, quite brilliant in its effect. The floor is covered with a great green rug in two shades. The ceiling is tinted a light buff, and from the center depends a wrought-iron lamp. The mantel has facings of reddish marble and large brass andirons. The furniture is antique, with green coverings.

The entrance-drive with porch and tea-house

Porch overlo

Beyond, and entirely separated from the dining-room, is the breakfast-room. This is, indeed, a porch, partially enclosed. And a most delightful place it is, with its latticed walls, its dome-like ceiling, its corner niches, its two entrance doors, its caned furniture with gaily covered borders, its table, topped with plate glass above the canes, the red cement floor with its rug, and, perhaps after all, its color, a grayish ground, on which is the lattice work in sage green. It is a room pleasant enough to be appetizing, and of exactly the same size —and that, of course, is none too large—for an agreeable breakfast party.

Seated here one looks out directly into the large pergola, a pergola quite vastly high, and stretching so far away from the house that its perspective is most unusual. It ends, in truth, against a blank wall, which examination presently discloses to belong to one of the forcing-houses. And its vine-shadowed walk readily invites one to a ramble through the grounds, the extent of which is by no means hinted at from the entrance of the house, but which, on the inner side, is found to be most considerable. One wanders here from garden to garden, from greenhouse to greenhouse, from hothouse to hothouse, from arbor to arbor. No doubt all these things have their special place on the formal plan, but the visitor will not concern himself as to arrangements, for the charms and delights of this wonderful place are so infinite in their variety that more than one journey amid their floral delights is essential to their enjoyment. As for their understanding, that is quite a different matter, for the gardens of "Firenze Cottage" were made for pleasure, and very agreeable and delightful are the pleasures they afford. In a certain general way these inner gardens consist of certain general groups. The hot-houses, forcing-houses, conservatories, and the like, constitute a group of structures thoroughly utilitarian in purpose and very extensive. Even before they have been seen the visitor has been made aware that only a horticultural plant of the first magnitude could turn out the immense number of bedding and decorative plants required here, as well as care for them in the winter. The houses needed for this purpose are, therefore, quite numerous. They are enclosed within hedges of plants, chiefly cannas, which present a brilliant spectacle when a-bloom and almost hide the utilitarian nature of the structures they surround.

The breakfast-room is a latticed porch

ng the garden

The fountain in the sunken garden

The graceful willow is abundantly used

The library is on the left of the hall. Its walls are lined with red silk damask. The woodwork, which is confined to a low wainscot, the frames of the doors and windows, and the broad cornice, is Circassian walnut. This wood is also used for the mantel, the space above which is filled with a magnificent matched panel of the same beautiful wood. The mantel has facings of grayish marble and green and brass andirons. Just before it are two benches or seats, one on each side, which form a little space like an inglenook, and contains a tea-table, cosily placed for agreeable intercourse. There is a vast red rug on the hardwood floor, the furniture covering is red leather, and the windows have thin white curtains.

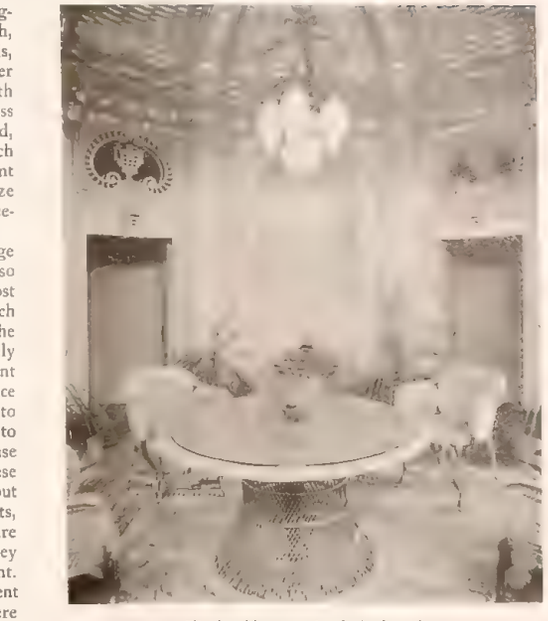
On the left of the hall is the music-room, which faces the entrance front. It is an oval apartment, very delicately designed and furnished. The walls are of light yellow, with a low wood wainscot painted white, and a painted festooned design, which includes small figured medallions. The mantel is of carved wood with a painting included in the decoration of the room above it. The curtains are sage green, with lambrequins, all with white borders. The hardwood floor has a green rug, and in the center of the ceiling, which otherwise is perfectly plain, is a rich decoration in low relief. The furniture is mahogany and gilt cane. A finely embroidered cope hangs over the back of the upright piano.

Behind this room, on the inner side of the house, but entered from the main hall, is the dining-room. This is a somewhat long room of very agreeable dimensions The walls are in stripes of two shades of green. The wood is mahogany and is used in the low wainscot, the door and window frames, the broad cornice and the mantel and its over-panel. There are white curtains at the windows, and the room is, therefore, quite brilliant in its effect. The floor is covered with a great green rug in two shades. The ceiling is tinted a light buff, and from the center depends a wrought-iron lamp. The mantel has facings of reddish marble and large brass andirons. The furniture is antique, with green coverings.

movable cushions of green. A superb marble table stands in the center, and behind it is a fountain rising from a pool let into the floor. The palms and ferns which are banked on either side of it add greatly to its effectiveness. There are numerous reproductions of Pompeiian bronzes, and Pompeiian designs and motifs have been used wherever possible.

Beyond, and entirely separated from the dining-room, is the breakfast-room. This is, indeed, a porch, partially enclosed. And a most delightful place it is, with its latticed walls, its dome-like ceiling, its corner niches, its two entrance doors, its caned furniture with gaily covered borders, its table, topped with plate glass above the canes, the red cement floor with its rug, and, perhaps after all, its color, a grayish ground, on which is the lattice work in sage green. It is a room pleasant enough to be appetizing, and of exactly the same size —and that, of course, is none too large—for an agreeable breakfast party.

Seated here one looks out directly into the large pergola, a pergola quite vastly high, and stretching so far away from the house that its perspective is most unusual. It ends, in truth, against a blank wall, which examination presently discloses to belong to one of the forcing-houses. And its vine-shadowed walk readily invites one to a ramble through the grounds, the extent of which is by no means hinted at from the entrance of the house, but which, on the inner side, is found to be most considerable. One wanders here from garden to garden, from greenhouse to greenhouse, from hothouse to hothouse, from arbor to arbor. No doubt all these things have their special place on the formal plan, but the visitor will not concern himself as to arrangements, for the charms and delights of this wonderful place are so infinite in their variety that more than one journey amid their floral delights is essential to their enjoyment. As for their understanding, that is quite a different matter, for the gardens of "Firenze Cottage" were made for pleasure, and very agreeable and delightful are the pleasures they afford. In a certain general way these inner gardens consist of certain general groups. The hot-houses, forcing-houses, conservatories, and the like, constitute a group of structures thoroughly utilitarian in purpose and very extensive. Even before they have been seen the visitor has been made aware that only a horticultural plant of the first magnitude could turn out the immense number of bedding and decorative plants required here, as well as care for them in the winter. The houses needed for this purpose are, therefore, quite numerous. They are enclosed within hedges of plants, chiefly cannas, which present a brilliant spectacle when a-bloom and almost hide the utilitarian nature of the structures they surround.

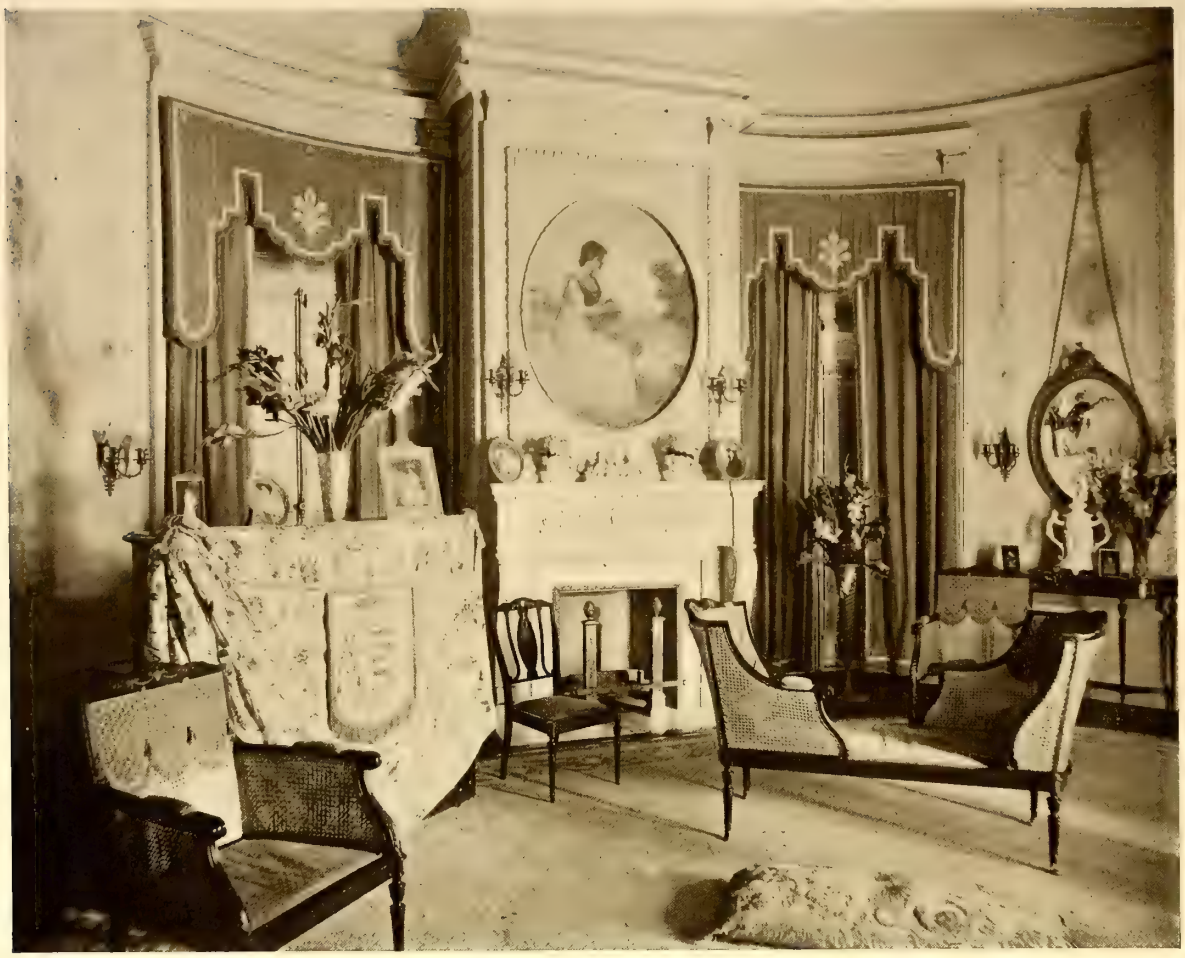


The breakfast-room is a latticed porch

The entrance-drive with porch and tea-house

Porch overlooking the garden

The fountain in the sunken garden



The music-room is oval, delicately colored and decorated

That there is a carriage-house and stable, a large two-story building, with servants' rooms in the upper floor, is quite to be expected. It is more out of the ordinary that a rustic arbor, quite on the outer border of the property, should be used as an earth-yard by the gardeners, utility being thus concealed within ornamental form.

From the greenhouses a wide path extends toward the farthest boundary. It is bordered with cannas on either side, and with iron trellises, to which trained fruit trees are applied. Quite at the end is the tennis-court. Then comes what at first sight seems vast fields of vegetable gardens, a group of squares, each with its enclosure of cannas or other high plants, a vegetable garden of quite entrancing beauty, very beautifully arranged so as to give a great deal of floral beauty while we may be sure the excellence of the vegetable products is not neglected.

The visitor wanders through these fields of flowers and vegetables until he approaches a structure that has all the outward visible signs of a conservatory. A small door at one end suggests the thought of entrance. And then he enters into a new world. This is no mere conservatory, but a vast grotto, with cunningly contrived paths, with rocks above and below, with a stream at the bottom, with passages up and down, a veritable maze of loveliness, that, once entered upon, can not be left until every path has been trod, every crevice visited, every cavern explored, the water itself crossed by its conveniently arranged stepping-stones, and the door gained on the other side. It is simple enough, of course, for there is but a single path that winds in and out, up and down, and has no branches or side openings. And everywhere, above and below, at the sides and handing from the roof, is a plant growth of most amazing variety and of transcending loveliness. Verily it would seem as though every plant that loves a warm moist air was gathered here, and perhaps this is so, for all I know. But it is a wonderful place, arranged in a wonderful way, and filled, almost literally to the roof, with wonderful plants.

Emerging thence one finds oneself immediately above a sunken garden that lies between the grotto and the house.

The library is trimmed with Circassian walnut with walls of red damask

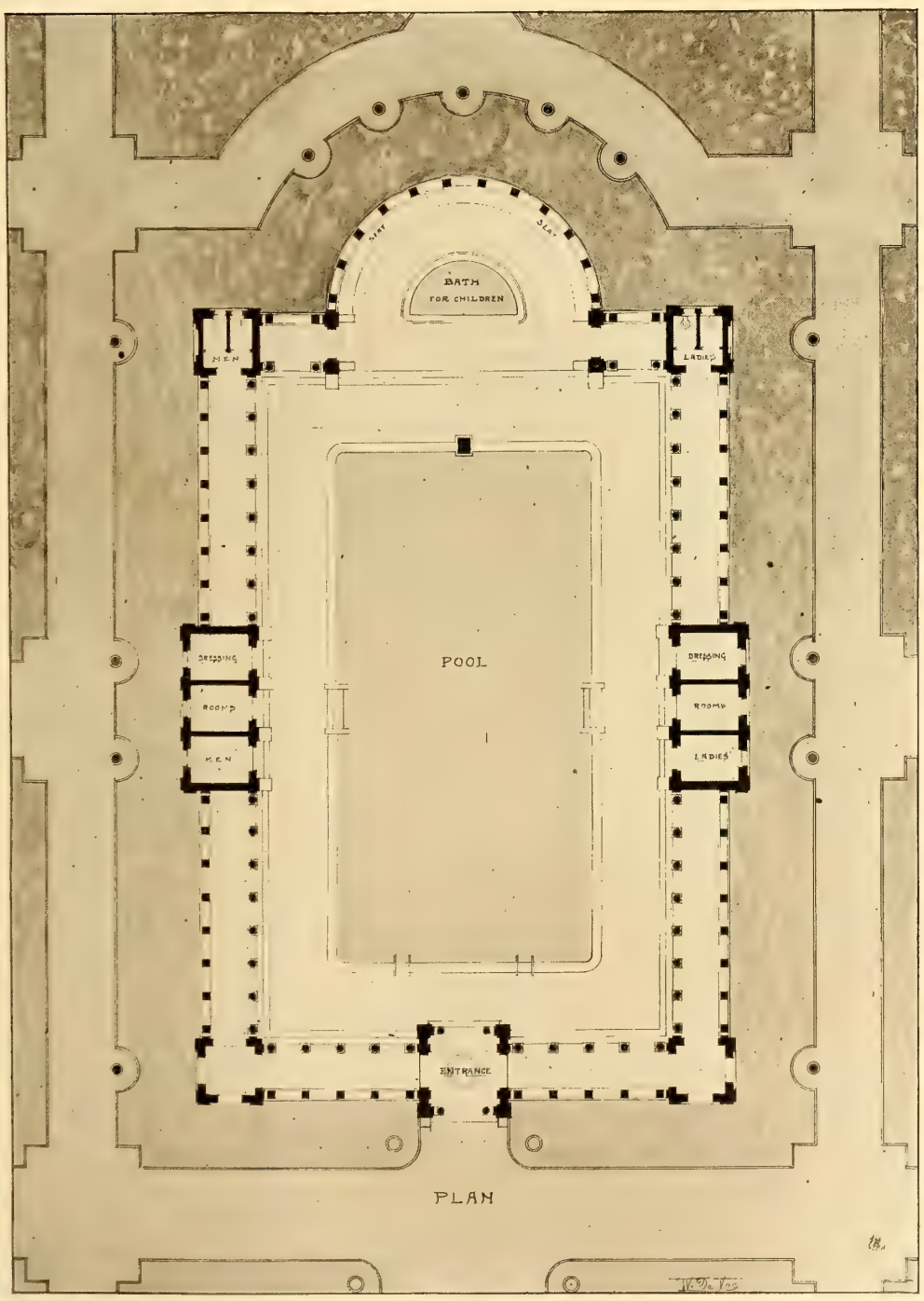
A swimming pool-enclosure of modern classic style

A Swimming-Pool for Private Gardens

By Lawrence Eden

SWIMMING-POOLS, while not usual adjuncts of the country estate, have, nevertheless, a real value and interest of their own, and are the source of an immense pleasure and satisfaction to those who possess them. They imply grounds of somewhat large extent, for they are obviously only adapted to sequestrated portions of the grounds, and, in most cases, are closely veiled within trees and luxuriant growths of shrubbery. And surely what can be more delightful than an early morning dip and swim in a cleanly kept pool beneath the shade of some grand old trees and in a spot seemingly remote from human habitations, and yet so near as to be but a short walk out from the house?

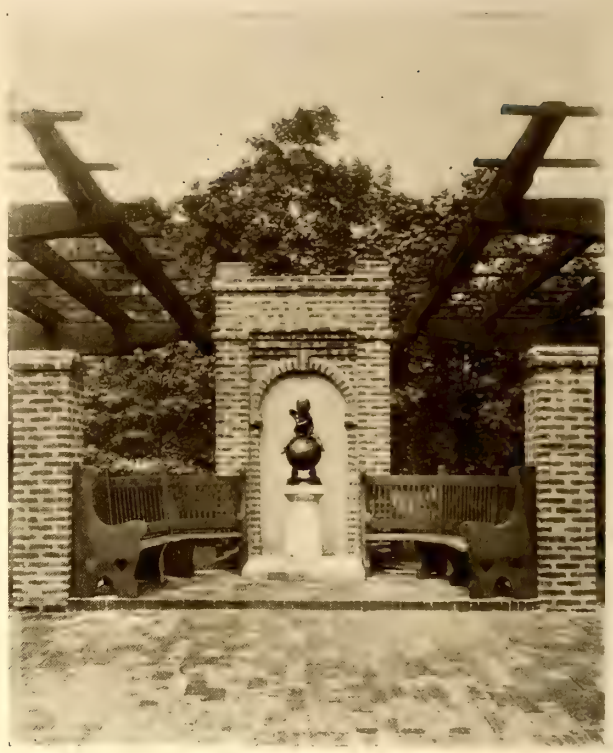
It is no wonder that such accessories are high in favor with the owners of large estates, nor is it strange that the swimming-pool has come to be regarded as, if not absolutely essential, at least highly desirable. So it has come to take its place with the tennis-court and other places set apart for outdoor sports, and yields to none of them in the pleasure it gives. Like everything else that goes to the making of a country estate, the swimming-pool may be large or small, inexpensive or costly. A mere widening of a brook may be sufficient in some cases, and is at once the most natural and the most readily constructed of all swimming-pools. When the estate possesses a private pumping-plant, however, it will be found more desirable in many ways to construct a basin expressly for bathing purposes, and to arrange for an ample supply of fresh water and an adequate system of change. In this way the pool becomes independent of the haphazard location of brooks and streams, and can be placed anywhere on the grounds. It is comparatively easy, then, to select a well-wooded spot, prepare an excavation of sufficient size, line it with concrete, arrange the feed and waste pipes, and the work is done.



Plan for swimming-pool and enclosure

There must, however, be a bath-house that the bathers may disrobe, and the architect's services are called in for the designing of a structure that will be conveniently adapted to these ends. It may be a rustic pavilion, per-

Bathing-house and pool

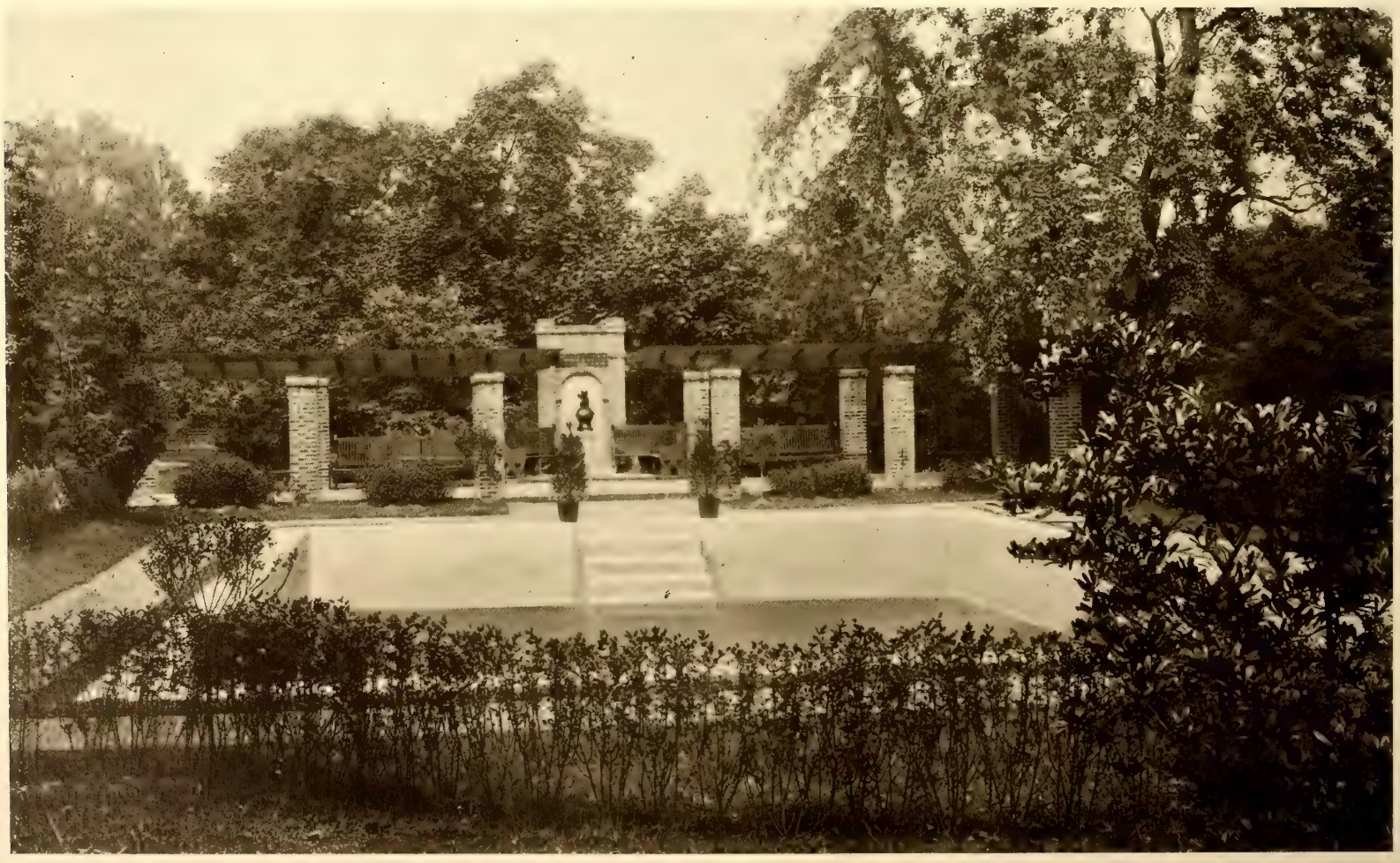


An ornamental center

haps as charming as the one pictured in the accompanying photograph, or it may be an elaborate group of buildings illustrated in the plan and section.

This is a highly ornate structure, designed on quite an elaborate scale and built with some regard to grandeur of effect. The drawings reproduce a design made by Mr. William De Vos, of Ghent, the quaint old Flemish city of Belgium, and are typically Continental in their general lay-out and arrangement. It is, in brief, a large open space, surrounded by a gallery or promenade, with a flooring tiled or grassed, as may be desired. The gallery, supported by Ionic columns, is covered to afford protection from wind and rain. There are three dressing-rooms on each side—on one, for men, on the other, for women. The outer wall is carried up high enough to shut out the view from without, but sufficient space is left above it to permit free access of air.

The great semicircular seat with which this sumptuous bath is closed is sometimes found in other forms as a high ornamental adjunct of the swimming-pool. The pergola of one of the illustrations is thoroughly charming in every way, and is a really noble ornament of the pool that lies below it.



A swimming-pool with pergola

TRELLISES

By C. C. Grant

THE word trellis is so familiar that it needs no definition—no need to know that it is derived from the old English word trelys, the French word treille, or the Latin, trichila. A mention of the word and one's mind pictures a light structure of crossed bars of wood or interlacing metal supporting and displaying the foliage and flowers of climbing plants.

Considering the many uses for trellis work, it is remarkable that it is not more generally utilized, but that it is being more appreciated one has only to look over recent architectural magazines to be convinced.

The architect who, in his design of country homes, considers the aid of foliage in direct connection with the house must needs employ trellis. It furnishes a simple and inexpensive means of adding interest to blank wall spaces, to entrances or to porches. A glance at our illustrations will bear out this point, and they tell more plainly than words the architectural uses for trellis work.

The structural pieces of wood trellis are usually of seven-eighths inch by two-inch material, the uprights secured flat against the walls and the cross-pieces nailed to them. Usually where a wood trellis stands free—for example, where it acts as a ladder for vines climbing to a system of projecting rafters — the uprights and crossbars are halved together. To have the divisions of trellis work approximate the size and shape of adjacent window-pane divisions preserves a pleasing scale. A bold but attractive architectural use of trellis is the covering of entire house walls with the vertical and horizontal strips, omitting, of course, the doors and windows. There are a number of notable examples of this, but the one uppermost in the mind of the writer is the old Wyck homestead, in Germantown, Philadelphia.

In garden design, especially in that of formal gardens, trellis work seems a necessary part of pergolas, pavilions, tea-houses and other architectural accessories.

Perhaps the most utilitarian form of trellis work is the trellis fence—a structure six to eight feet high of our crossed bars, in bays between posts. Such a fence, accompanied always by the necessary vines, furnishes a pleasing screen about service-yard and stable-yard enclosure, or about anything where concealment is desirable.

The city, too, has its uses for trellis work. Great unsightly walls, which usually occur on party lines, have been made sightly by an applied covering of small-scale wood trellis—perhaps a better word would be lattice—divided into interesting panels. This is usually done when the windows of an adjoining house look out on such a wall. The position of this lattice usually precludes the use of vines, hence the small scale of the crossing-pieces the better to conceal the wall. This is a method much developed in French architecture, but several excellent examples may be seen along Fifth Avenue in New York City.

A most serviceable and picturesque form of trellis can be constructed of bamboo bound together at the intersections by copper wire. The Japanese make extensive use of bamboo in interesting trellis forms.

Metal trellis is generally a stock product of interlacing heavy wire in stiffening frames. It is to be had in panel or arched forms, and, while not very architectural, is very practical. It is desirable where the trellis should not count strongly in the scheme of things.

White is perhaps the most effective color for wood trellis, counting strongly among the dark masses of foliage. The lattice used on city house blank walls is painted dark green, its position requiring an inconspicuous color. The effect is not unlike foliage. Green or black paint is desirable on metal trellis.

A simple door trellis

Trellises and pergola: the artist's adjuncts of the floral garden

In considering trellis one must consider vines—the two are inseparable except in the case of city lattice work. A mention of a few of the most serviceable for display or for screening purposes or for both may be of use.

The one drawback in the use of trellis work is the care necessary to preserve it by the use of oil paint, which should be applied about every three years. Even though vines twine themselves about their trellis, this can, with care, be painted during the time of year the leaves are off. If the vines are trained by being tied on the surface of the supporting trellis, they may readily be taken down and the trellis painted. Another, and perhaps the simplest, scheme is to use only vines which die down each fall and come up rapidly the following spring. A good example for this purpose is the small white-flowered clematis (Clematis paniculata). Cutting it back to the ground in the spring produces the best results. It requires little if any training—supporting itself by its leaves. The Japanese hop (Humulus japonicus is another excellent vine that dies away from the trellis each fall. It is an annual and a compact rapid grower, with leaves five or six inches across. It supports itself by means of tendrils and branches freely. Altogether it is one of the best of screening vines. Seeds may be sown out of doors about April fifteenth; better results, however, are obtained from plants started indoors about the middle of March. Sun and plenty of water in dry weather are essential for successful culture. There is a showy green-and-white-leaved variety (Humulus japonica, var. variegatus), which is as strong a grower as its plainer relative.

A trellised house front

Of the vines which must be trained it seems hardly necessary to mention the well-known old standbys, wistaria (Wistaria chinensis), trumpet vine (Tecoma radicans), or the various honeysuckles. All add the loveliness of their flowers to their value as a screen. The first two require a rich soil, should be planted in the spring or early fall and not pruned until after the flowering season.

Rose-laden trellises

An enclosed porch

The Navajo rug, with its warm orange-red, gives a feeling of cheer

Vacation Home-Making

By Edith Haviland

THE unmistakable charm of summer living is in the possibilities for shaping even the crudest structure into some expression of its occupants' tastes and needs. Differing in detail from the all-the-year-round residence, the camp, cottage or bungalow for summer use is none the less attractive to the real home-maker who finds no lack of material in the shops for carrying out the progressive ideas and ideals of our twentieth century.

In the matter of floor coverings, for instance, there has never before been so abundant provision in inexpensive, unusual weavings. With the grass matting rugs in a solid color, red, blue or green, one may start at a minimum cost the color scheme of the living-room, bringing out in the draperies and other fabrics some decisive design. Or, at a higher price, there are the figured India druggets, with a groundwork of light brown or camel color, and the pattern woven in colors.

The cotton rugs woven on hand-looms in the old style have regained their former prestige, particularly when they are made with good dyes or woven with flower borders. Made of cretonne, too, these rugs lose their solidity of tone and have almost a patterned effect. Some of the most artistic color combinations, strange to say, are the handiwork of the blind, and the border designs are unusually novel.

The most durable rug for real wear is made of wool and woven in Scotland, although it is found in this country under various appellations. This past year the severity of the geometrical patterns has been relaxed and some flower designs in naturalistic style are in vogue. The bungalow, or Mission rug is a new departure in a solid color woolen rug, with the ends finished with narrow lines in contrasting colors.

The large-sized Navajo rug that is shown in the illustration is made by a tribe of our Western Indians, and for vivid coloring can not be equalled by any foreign country. Even in a room that is inadequately lighted these rugs, with their warm orange-red, impress one with a feeling of cheer. In fact, so intense are the prevailing tones that they demand

The open fireplace expresses thorough interior comfort

Shelving is both ornamental and useful

Plenty of space for porcelain and china

A comfortable lounge is a necessary furnishing

surroundings that are subordinate enough to leave the rug as the feature. One may remember the Navajo rug when furnishing a living-room that is too heavily shaded by the piazza, or for interior halls that lack sunlight.

As the cost of a Navajo is considerable, it is not a cheap floor covering, especially when its use must be confined to a few months in the summer; for, unlike the Oriental rugs, it can not be transplanted from one room or home to another. A soft-toned Oriental rug is often an economical purchase when a winter and summer residence is established, as it will accord with almost any colorings. In a Long Island country home all of the rugs from the city home are transferred at the beginning of the summer to the seashore, and returned each fall to the town house.

The adoption of one large rug for each of the living-rooms, with small sizes for the bedrooms, is the accepted plan for reasons both practical and sanitary. In the Oriental rugs one may combine various sizes even when they are unlike in colorings and designs. In the domestic rugs, Wilton, Brussels and others, the necessary sizes may be made to order when they are not kept in stock.

In summer homes among the trees the interiors may be supplied from native wood in rustic or semi-rustic work. In the illustrations there are some suggestive ideas that have been carried out in stairways and furniture.

A comfortable lounge is a large item of expense for the summer cottage, but is a really necessary part of the living-room furnishings. According to the appropriation that is made for this piece of furniture, one may secure a luxurious tufted davenport, a woven-wire divan or a box lounge. The latter, when fitted with a separate hair mattress, is a good selection at a moderate cost.

Under some conditions a canvas swinging settle may take the place of a lounge, or one made of reeds or willow may hang from the ceiling. Of the former kind there are some improvements the last year on the first pattern which came out as a novelty, but by its cordial reception has become installed as a staple contribution to the home.

With the introduction of a divan comes the vexing question of spread and pillow covers, and a needed word is to be said about making these details too conspicuous. All sorts of odds and ends are frequently gathered at this point. The Yale student brings home his college pillow, and his sister, not to be outdone, installs her school or college colors. Another member of the family acquires at a bargain counter some pillow tops, and the collection is incomplete without additional contributions of embroidery, leather work or stenciling from interested friends.

The cover for the divan need no longer be a striped Bagdad, as there are so many varieties now from which one may make a choice. A plain-colored spread is the safest choice (especially when the pillow covers are figured), and goods fifty inches wide may not demand another width for a divan of ordinary proportions. To take away from the severity of a plain material there may be a band of trimming sewed just above the hem, about two inches from the edges. The coarse homespuns that come in many different shades are well suited for couch spreads in summer cottages.

A generous provision of tables, square, round and oblong, with some of the drop-leaf and folding make, may be among the furnishings for the vacation home.

In a cottage or bungalow of small dimensions the living-room is usually made the eating place, and the question of table accommodation is important. Instead of an extension dining-table, the drop-leaf may be considered. In one home a pair of these tables took the place of the conventional extension-table, one standing in the center of the room with both leaves raised, the other, when not in use

at meal-time, placed against the wall. Both were joined together when guests were added to the regular family.

A tea-cart is a welcome addition to the large living-room, either for serving dessert and coffee without a maid, or for holding relays of provisions. Walls that are made of wood afford unlimited opportunities for auxiliaries to the tables in the way of shelves, either stationary or made with hinges to fold down when not in use. Corner shelves are adapted for jars or bowls of flour; narrow shelves over doors and windows may hold copper or brass trays. If the dining- and living-room are combined, a decorative feature may be made with attractive china placed in open shelves. In two of the illustrations the shelves are fitted in the "jog" at one side of the fireplace, with covered spaces for holding food-supplies.

Glass, silver and linen for the table are also closely related to the successful making of the summer vacation home. A plain plated ware that may be easily cleaned lessens the care to keep it in proper condition, and avoids anxiety as to its safety. The most experienced housekeepers make such a choice as this, and then leave the silver packed away in the cottage when it is not in use.

The heavy glassware, now so much seen in so-called Colonial shapes, with preserve dishes of the same, are a good selection for the bungalow. A complete set of either china or glass is not essential, but it is wise to begin with a pattern that is kept in open stock in a store from which additions may be made from time to time.

If the table top is capable of being used without a cloth, some plate doilies, with a center-piece, may be used on a round space, or, on a square or oblong table, strips or runners of linen. Colored linen is now used for these strips, yellow, gray, blue or green, with hemstitched edges, or finished with a stenciled pattern or buttonholing.

The open fireplace expresses so much interior comfort, especially on the days when disagreeable weather makes a retreat to shelter, that its construction and fittings should, individually and collectively, receive intelligent attention. A well-laid fireplace with, perhaps, some quaint tiles set into the brickwork, an opening of good proportions, and a flue of perfect drawing qualities—how much these mean to every inmate of a cottage or bungalow. Out-door pleasures on land or water are forsaken when fog or storm set in, and the best exchange is a hospitable hearth to draw about.

Bedroom furnishings in the camp or bungalow are on so simple a scale that there seems hardly any excuse for their not being perfect of the kind. A floor that is finished for the laying of rugs may first have the pieces of furniture arranged and then the vacant spaces beside the bed and at the foot laid with rugs. The cheapest bedroom rug is the cotton variety as spoken of before. Small Brussels are now made in good patterns. The Scotch rug and others of plain wool afford other choices. Strips of carpet in the ordinary twenty-seven-inch width, the three-foot, or one still wider, make serviceable rugs when the ends are bound with braid. These strips are also helpful when it seems imposible to get the right length in bath-room rugs.

White iron beds in the newer pattern have a rounded head and foot in place of the straight bars and brass knobs. Wooden beds with slender posts and low head- and foot-board are becoming popular, and these are now made up in the moderate-priced woods. The spring, mattress and pillows must, of course, receive first attention, and no decorative adornment should be made at the loss of the best quality in these foundations for comfort. A colored spread to lay over the bed-clothes may be of cretonne, crêpe or linen, plain or figured, and long enough at the sides to do away with a valance.

Simple curtaining is to be preferred

A generous provision of tables is desirable

The open fireplace expresses interior comfort

Concrete court (Hoppe)

Large court (Schoenthal)

L'Art Nouveau Houses in Austria

By Ralph de Martin

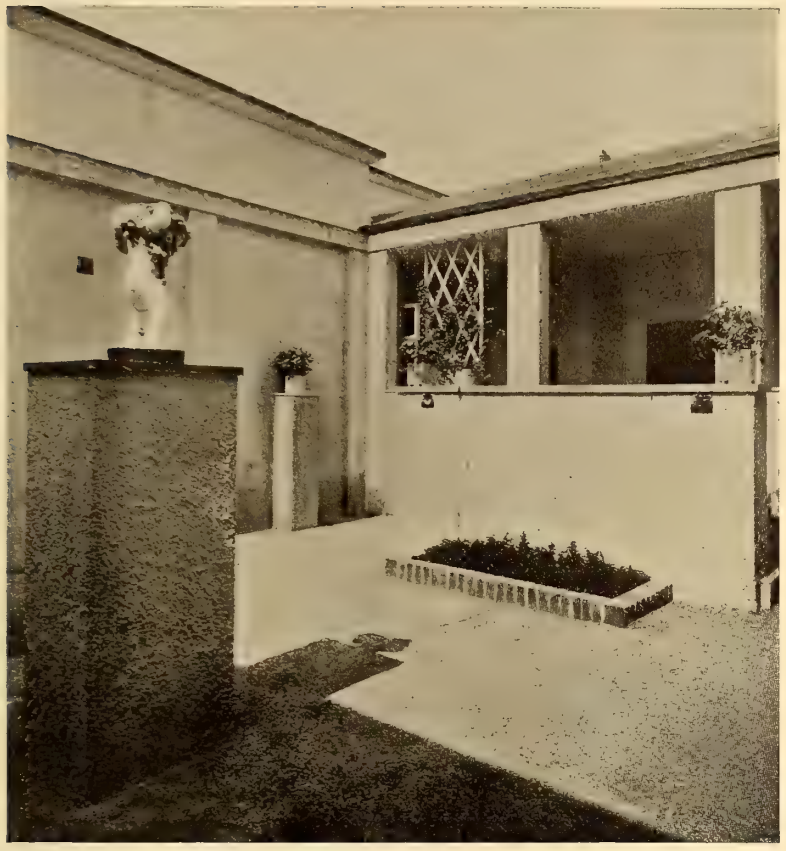
AN ARCHITECTURAL exhibition planned and carried out in a consistent manner from the very beginning, from the erection and arrangement of the exhibition halls to the selection and display of the actual objects within the buildings, is a form of exhibit as yet unknown in America. The architectural exhibition in America is a medley of drawings, with some models of buildings and perhaps some plaster studies in sculpture. Many of these contain good things, many show the best work our best architects have done during the year preceding the exhibition; but at the most, these exhibitions have only a technical interest. It is the architect and artist who is especially interested in them, who recognize the good things they offer, who enjoy and delight in them.

A new form of architectural exhibition has come into vogue in Germany during the past few years, and it may be a matter of some interest to study one of these both as a model of what such exhibitions should be, but as affording an insight into the intensely personal work that many German architects are now doing. Much of this work is familiarly known by its French name of the "art nouveau." And new art it is, in a very new sense. It is but fair to state at the outset that not all of this new art is good or even interesting, and while I am using a German exhibition as a text for the present article, it is but simple candor to point out that the Germans themselves are often the most flagrant offenders against the canons of good taste in their most developed forms of art nouveau.

Eccentricity in art should not, however, blind us to the inherent interest and value of a work of art. The human mind produces nothing more precious than a work of art, and even the most inadequate art work may have an inherent value and be expressive of an idea, an art impetus that we may not always feel, but which nevertheless, truly exists. Hence, it follows that nothing is so rash than a wholesale condemnation of art nouveau, even of the German type, because of certain pronounced eccentricities. Let us admit it has its eccentric form, and leave such products in the class to which they belong, actually as matters of no importance, and then turn to the better, saner works, that we may win from them such delight and enjoyment as we may.

The Vienna art exhibition, 1908. Main entrance (Hoffman)

This much granted, let me hasten to add that no group of artists are doing such splendid work to-day as the German workers in



Small court (Hoffman)

Entrance to country house (Hoffman)

the art nouveau. This phase of art is cultivated in France and Italy, and to a less extent in England; but the Germans are the leaders, clearly and unmistakably, and they lead, on the whole, grandly and well. Those who were fortunate enough to see the German rooms at the International Exhibition at St. Louis, saw there a perfect revelation in modern art workmanship, perhaps the most complete and most remarkable display of the kind that, up to then, had been shown in America.

Meantime German art has not stood still. The art nouveau in Germany is no longer limited to interior decoration, but actual buildings, gigantic warehouses, vast churches, real dwelling-houses, structures of every type and kind have been designed and built in this new form of art. Much of this is good, some of it is positively splendid, and much of it is interesting in the highest sense. That there have been some failures may be frankly admitted, but the note of progress is definite and sure, and the triumphs of the new art are already secure in its infancy.

And what is the art nouveau, it may justly be asked? I shrink from attempting a definition of something that is at once so pronounced and so vague, but certain well-defined characteristics are clearly manifest. It is, in the first place, a departure from established tradition. It ignores what in art is known as the academic. It is both based and developed on construction, and is, in many senses, construction embellished, adorned and glorified with constructional decoration. It is not an enriched art, for it is often solemn and somber in every aspect. But its soberness, when relieved, is relieved in a new way. It is an art that throbs with the vitality and the individuality of the artist. And this is true whether it be a work of architecture or a piece of decoration; whether it be a mural decoration or a bit of sculpture. It is the expression of the artist's own soul, of his mind and his imagination. It is his personal, individual creation.

It necessarily follows that the art nouveau is not developed out of the copy-books and that it is not manufactured by rule. A good deal of modern architecture, and of modern American architecture, is concocted in this manner, and very safe and sound such architecture is. Moreover, it is much easier to copy than to invent, and the architect who can indicate the existing sources of his ideas can design very many more buildings than the architect who must think out every detail, and personally invent and design everything

Cemetery (Braüer)

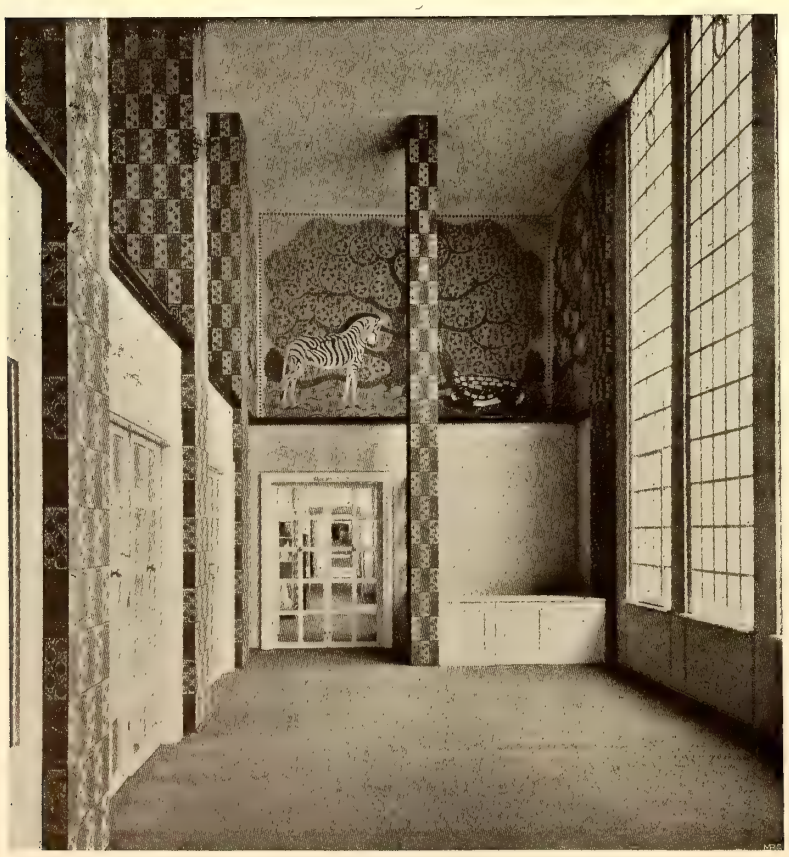
"The dance," relief by Franz Metzner

that enters into his work. The new art may never be popular among American practitioners of the noble art of architecture, but it is, nevertheless, well worth the study and attention of every true lover of art.

As a practical illustration of some of the more recent stages of art nouveau as developed in Germany, I want to invite attention to the architectural exhibition held at Vienna in 1908. The entire exhibition was a successful solution of the architectural problem. Here architecture did its best and most difficult work. It ruled by serving other arts and produced its effects of simplicity by complicated devices. It is extremely difficult to give expression to the secret of beautiful proportions and to produce a rhythm of space in harmony with the purpose in view, because the average human brain contains no organ for the appreciation of such effects. Yet here everything was so finely done, the exhibits so completely found their requisite spatial atmosphere, that even the spectators, in their attitudes and gestures, seemed free from affectation, and to be both natural and in keeping with their surroundings.

The exhibition was dominated by the genius of Herr Hoffman, who is an architect who has acquired a remarkable sureness of procedure and a mastery over materials and objects in which he has few equals and which is so highly developed as to almost preclude the possibility of error. His methods found expression not only in the plan according to which the various halls and courts were grouped, but in the arrangement of the exhibits in such a manner that each contributed to the general architectural effect. The result was a unity that made the underlying diversity pleasing and intelligible.

There was a profound significance in the arrangement of the halls and courts, including the lofty central building, with its niches containing symbolical sculptures—perhaps conceived as polychrome faience rather than as white plaster —the groups of smaller halls to right and left, the pretty little house which exhibited all the agreeable features of a dwelling-place; the great court overlooked by the high windows of the central hall; the small courts which invited the visitor to pause and rest on his way from gallery to gallery;



Vestibule, by Hoffman, with mural decoration by Kling

Small court (Roller)

the poetic little nooks, embellished with flowers and fountains and pools; and, finally, the gardens, in which a modest but highly successful attempt was made to show that the arrangement of a garden is a task worthy of artistic endeavor. Fine, fine, fine, and interesting, if not beyond compare, at least in a true and penetrating sense that left a definite impression on the mind.

The educational value of such an exhibition can not well be set down within reasonable limits. It showed, more than anything else, the arts working harmoniously together for the betterment of human life. It presented a picture of life as the artist would have it, and it embraced the whole calendar, including even the application of domestic art to the embellishment and amelioration of everyday life.

A word should be added on the sculpture. The Metzner room carried out the promise of the architecture, and proved that, in sculpture also, the master is revealed by what he omits. In sculpture, as in decoration, scene painting and stage setting, and in every art which aims at style, simplification of forms and omission of unessential details favor the production of monumental effects. This artistic economy, remarks a German writer in commenting on this exhibition, is the last refinement of art. A glance suffices to tell us whether elaboration of detail has been prevented by lack of skill or purposely omitted by an artist of consummate ability. In the latter case we see the deep study of Nature and the confident mastery of detail, even in constrained stylistic treatment, and feel an impression of life and reality which is lacking where the stylistic simplicity of form has been assumed only as a cloak for incompetence.

Metzner's sculptures are instinct with life, despite their startling simplicity of form. Their meaning is expressed by a few eloquent lines and surfaces. No other living sculptor is so nearly an architect as Metzner. No other is so well able to give life to stone without destroying the effect of the massiveness of the material. He has accomplished feats that appeared impossible in the treatment of modern clothes.

Birds and the Country Home

By E. P. Powell

I COUNT the birds into my family, and consider that they earn their living quite as much as I do myself. For that matter, they own the property by just as good a right as my deed. When they get here in the spring the catbirds deliberately divide up my nine acres between their six or eight families. Each family occupies its own section, does most of its hunting there, and its singing. I am persuaded that, taking it all in all, the birds are as profitable to me as my hens. They do not give me eggs for market, but they enable me to grow fruit for market, beside adding immensely to the pleasure of my homestead. I am sure that I could not get on without bird associates in running my orchard and fruit garden. I watch the hundred of birds, working with all their might during three or four months, and every one of them looking upon my enemies as a victim. The number of slugs, bugs, moths and worms destroyed in a single day on my nine acres I know to count up into the tens of thousands. It leaves me enough to do after them, but my labor alone would be ineffectual in many departments of horticulture. The logical consequence is this, that as an economic movement I can do nothing better than to make the birds at home with me. In order to do this I must, first of all, attend to the making my own surroundings attractive to them. Then I refuse to allow any habits to grow up which disturb or annoy the birds. Finally, having gathered them about me, I make sure that they have their quota of food, and especially during those periods when the least is provided by Nature. If they take more than their share of cherries and black raspberries, and a few other things, it is my business to see to it that I get my own proportion. At least, I will not rob them. When I cover forty out of my sixty cherry trees with mosquito netting, I leave twenty for the robins and catbirds.

Hedges and shrubbery, especially such dense-growing bushes as Tartarian honeysuckle and mock orange, and hedges made of arbor-vitæ and hemlock, are soon discovered by the birds, and utilized by them for homes. I have eight or nine nests of catbirds every year, and I find that their nests are always in very nearly the same place, although hidden with remarkable skill. The song sparrows are here in large numbers always, and the enumeration of robins would be impossible. There are four of their nests under my balconies and in the vines that clamber my house. Bluebirds and indigo birds are about equally plentiful, and the scarlet tanager has come into friendly neighborhood with the wood thrush and Wilson's thrush. These thrushes are generally very shy of houses, and can be found only in the edges of the woods; but I have them building and whistling within a few rods of the house. The rose-breasted grosbeak and the redstart flit through the foliage everywhere; and, although I do not like him, the oriole is certainly a wonderfully beautiful creature. The purple finch and the yellow warbler find comfortable nesting-places about my lawns, and wrens divide up the cozy corners of my porches with the robins. In other words, we try to have just the right sort of homestead ready for the birds to build in, adding to the arbors and hedges a few artificial boxes for the bluebirds and wrens. They sing all day long, by turns, and the catbirds become so familiar that they will call me through the windows to talk with them. After the first of August these birds rarely sing, but they do like to talk prose with you.

A gun we must have, but it is used as infrequently as possible, so that the birds may not be disturbed with explosive sounds. It is rarely fired except to kill a red squirrel or a crow. It is a pity, but all the same it is true, that this very pretty squirrel has no sympathy with his neighbors, and not a bit of compunction about breaking up birds' nests. He eats every young bird that he can find or catch unprotected, and then to this mischief he adds the destruction of pears and sweet apples to get at the seeds. The birds make a din when a squirrel appears, and we soon pick him out with the gun—sorry, but can't help it. Crows we can rarely get at, for they are cunning enough to come early in the morning, before human folks are abroad, and they are out of sight as soon as a door swings. They manage to do a deal of mischief breaking up robins' nests. I have seen them picking these dainty morsels out of their homes, and flying away with them in their beaks. The Government Bulletins have very nice words to speak for the crow, but he has no place in our bird paradise. There are two more birds that get no welcome. The English sparrow is everywhere about us, and is noisy just across the street, but he so well knows that we have no welcome for him that he rarely flies into our lines. You can get rid of him permanently only by harsh measures. We never allow him to nest in our trees or our houses, and we never feed him. His pugnacious habits are intolerable, and he will manage to do as much mischief in fruit or grain as a whole flock of honest birds will do good. We are of the same opinion concerning blackbirds, and they have found it out, so that they rarely intrude. In Florida the red-winged blackbird has a welcome on account of his superb choral songs. It is the only bird that I know that sings in chorus. By the way, if crows pull your corn, set up three or four poles about the field with an ear of corn tied to the top of each. He is so suspicious that he is more afraid of a gift than of a gun, and he will stay rigidly out of a cornfield where free corn is offered him.

I am fully in sympathy with the anti-cat crusade. You can not have cats roaming about and have your birds happy. It is true that a beautiful cat is a beautiful creature, and some of them know enough to be almost indispensable about the house and fields. If you happen to have one of these really admirable felines, do as I do with mine; build a small house, a cat palace I call it, two stories high, with a back yard and a front yard, and cover the whole over with wire netting. Put pussy in there early in May, as soon as the birds begin to build, and keep her there until the middle of September. Feed her well, of course, and occasionally take her out for a petting. She is an incurable enemy of the birds, and it is to the marauding of these petted animals that we owe the larger part of the destruction of the best helpers that we have. The birds are never easy when puss in abroad, but they very quickly learn when she is in retirement. This plan works no pain to the cat, although she is very fond of roving; make the house big enough for her to tramp about, and, if possible, let her have a companion.

Those who grow fruit, especially cherries and berries, will challenge me as to the value of some of our songsters. The answer is, plant for bird food as surely as you do for your own food; and among the best trees for this purpose are wild cherries, mountain ash, service bush, high bush cranberry and the barberries. The viburnum, or high bush cranberry, draws that splendid bird the pine grosbeak, together with flocks of cedar birds, in midwinter. A half dozen trees of mountain ash will do wonders, not only for your own birds in autumn, but for birds of passage all through October and November. They will drop down on your

Continued on page 361

Fig. 1—A thirteen-room bungalow, costing $9,000. J. F. Rhodes, architect
Pasadena, California

Fig. 2—A five-room bungalow, costing $1,500. Wilfred Smith, architect
Pasadena, California

Fig. 3—A twelve-room bungalow, costing $6,500. Hudson & Munsell, architects
Los Angeles, California

Fig. 4—A nine-room bungalow, costing $3,000. G. F. Warwick, architect
Pasadena, California

Fig. 5—A concrete bungalow. C. W. Buchanan, architect
Pasadena, California

Fig. 6—A six-room bungalow, costing $2,000. P. J. McNally, architect
Altadena, California

Fig. 7—An eight-room bungalow, costing $6,300. L. N. Merritt, architect
Pasadena, California

Fig. 8—A nine-room bungalow, costing $6,000. C. C. Clark, architect
Altadena, California

A GROUP OF BUNGALOWS AT PASADENA, CALIFORNIA,

Photographs Copyrighted, 1

Fig. 9—A seven-room bungalow, costing $2,000. Thomas Elsworth, architect
Pasadena, California

Fig. 10—A twelve-room concrete bungalow. C. W. Buchanan, architect
Pasadena, California

Fig. 11—A model bungalow, costing $2,000. Mr. Cooke, architect
South Pasadena, California

Fig. 12—An eight-room bungalow, costing $4,500. E. M. Shiming, architect
Pasadena, California

Fig. 13—A ten-room bungalow, costing $5,000. Mrs. James Garfield, architect
Pasadena, California

Fig. 14—Another view of a ten-room bungalow, costing $5,000
Mrs. James Garfield, architect, Pasadena, California

Fig. 15—A five-room bungalow, costing $2,000. W. Terwillinger, architect
Pasadena, California

Fig. 16—A six-room bungalow, costing $2,000. P. J. McNally, architect
Altadena, California

OSTING FROM FIFTEEN-HUNDRED DOLLARS UPWARDS

by Waldon Fawcett

Fig. 1—A thirteen-room bungalow, costing $9,000. J. F. Rhodes, architect
Pasadena, California

Fig. 2—A five-room bungalow, costing $1,500. Wilfred Smith, architect
Pasadena, California

Fig. 3—A twelve-room bungalow, costing $6,500. Hudson & Munsell, architects
Los Angeles, California

Fig. 4—A nine-room bungalow, costing $3,000. G. F. Warwick, architect
Pasadena, California

Fig. 5—A concrete bungalow. C. W. Buchanan, architect
Pasadena, California

Fig. 6—A six-room bungalow, costing $2,000. P. J. McNally, architect
Altadena, California

Fig. 7—An eight-room bungalow, costing $6,300. L. N. Merritt, architect
Pasadena, California

Fig. 8—A nine-room bungalow, costing $6,000. C. C. Clark, architect
Altadena, California

Fig. 9—A seven-room bungalow, costing $2,000. Thomas Elsworth, architect
Pasadena, California

Fig. 10—A twelve-room concrete bungalow. C. W. Buchanan, architect
Pasadena, California

Fig. 11—A model bungalow, costing $2,000. Mr. Cooke, architect
South Pasadena, California

Fig. 12—An eight-room bungalow, costing $4,500. E. M. Shiming, architect
Pasadena, California

Fig. 13—A ten-room bungalow, costing $5,000. Mrs. James Garfield, architect
Pasadena, California

Fig. 14—Another view of a ten-room bungalow, costing $5,000
Mrs. James Garfield, architect, Pasadena, California

Fig. 15—A five-room bungalow, costing $2,000. W. Terwillinger, architect
Pasadena, California

Fig. 16—A six-room bungalow, costing $2,000. P. J. McNally, architect
Altadena, California

A GROUP OF BUNGALOWS AT PASADENA, CALIFORNIA, COSTING FROM FIFTEEN-HUNDRED DOLLARS UPWARDS

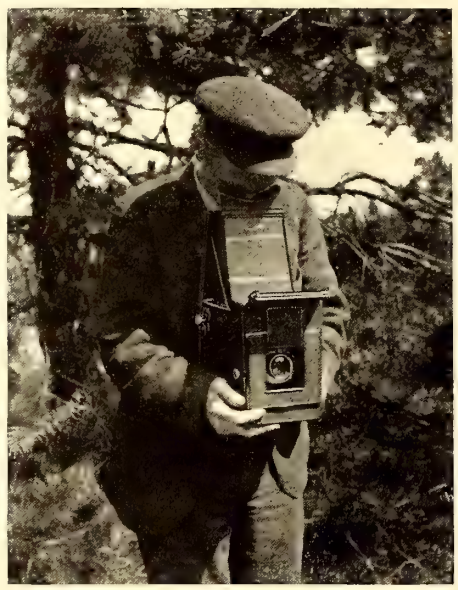
Photographs Copyrighted, 1909, by Waldon Fawcett

Photographing Birds

By B. S. Bowdish

PHOTOGRAPHY is one of the newest methods in the study of birds. Up to a very few years ago apparently no one had given much thought to the possibilities that lay in the use of the camera among the feathered folk, in depicting them and their entertaining ways. In 1900 there appeared "Bird Studies with a Camera," by F. M. Chapman, one of the early pioneers in this use of the camera. In 1902 "The Home Life of Wild Birds," by F. H. Herrick; "Nature and the Camera," by A. Radclyffe Dugmore, and "Nestlings of Forest and Marsh," by Irene G. Wheelock, were brought out. Since that time a number of books of such nature and many magazine articles illustrated by reproductions of Nature photographs have appeared.

In many branches of photography certain rules may be laid down, the following of which is a comparatively easy matter and means success, but in nature photography, and particularly in photographing live birds, the element of chance has never been overcome, nor is there any apparent likelihood that it will be. Mr. William L. Finley, of Oregon, one of the most highly successful bird photographers in the country, who has a very extensive collection of beautiful results of his work with the camera, says that he has wasted thousands of plates, and he considers that with the best apparatus and the utmost skill one may expect to expose an average of a dozen plates for each thoroughly good negative secured.



The focal plane camera in operation

There are some few birds which, under favorable conditions (usually with young or eggs in the nest), afford comparatively easy subjects for the photographer, but, for the most part, birds are very shy and suspicious regarding a camera.

With some species it has been found nearly or quite impossible to get them to come to their nests while camera and operator were near, even though both were well concealed. Mr. Chapman introduced a portable blind for concealing camera and operator, which has been widely adopted, with various modifications, and which has contributed greatly to the success that has been achieved in bird photography. This arrangement consists of an umbrella, the handle set in a telescoping brass rod, one end of which is sharpened to push into the ground, the middle of the umbrella top being left open for ventilation, and a round tent of green cloth, gathered at the top, is draped over the frame and falls to the ground. These tents offer no rude contrast to natural surroundings, and they may easily be draped with branches or vines, making them still less conspicuous. Small slits for peep-holes or to admit the lens of the camera are made in the walls of the tent as desired.

No single rule applies, even with different individuals of the same species of bird. The bob-white has usually been

Frame of the umbrella tent

Camera with telephoto attachment for long-range work

Umbrella tent for photographing birds

found an easy subject for photography when sitting, yet the writer found this to be far from the case with one of these birds found incubating her eggs on June 7, 1906. This bird was very wild and successfully frustrated all efforts to photograph her. The hundred feet of rubber tubing and bicycle pump, which has so often been successfully used to operate the camera from a distance, was brought into play, but, though the camera was very carefully covered, she refused to go on her nest while it was there. An arched-topped tin and wood cover was then made and painted green. This could be placed over the camera, entirely concealing it except the lens. A "fake" camera was placed under this blind and left there for several days for the bird to become accustomed to, when the real camera was substituted, but Mrs. Bob refused to be trapped. Finally, the camera was left in position over night, and, though the bird was on the nest when the exposure was made the next morning, she moved so badly as to spoil the photo. Despite this disturbance of her household affairs Mrs. Bob hatched sixteen young Bobs.

An improvised ladder of cordwood for photographing nest and eggs of hairy woodpecker, fifteen feet from the ground

Some bluejays are bold about their nests, and allow photos to be made without much difficulty; others are almost impossible subjects. One of the great difficulties in photographing many birds on their nests is the fact that the nests, being in the shade, the light will not admit of a "snap," and the bird spoils a time exposure by movement.

A very convenient thing in photographing birds and their nests is a clamp instead of a tripod, by means of which the camera can be attached to the limb of a tree. The writer has used two kinds with satisfaction, a ball and socket and a simple type of pocket clamp.

One spring it was noticed that a pair of bluebirds were seeking a nesting-place around the barn, and a box was hurriedly put up just over the upper floor window.

The birds immediately took possession, and after the young had been hatched out a bracket was fastened up about four feet from the box, to which a camera could be screwed, the tube running back through the window. Back in the shadow of the interior the operator could watch the arrivals of the parents with food, and make exposures. Some six or eight negatives were thus secured, and at the same time a record was kept for several hours of the time periods between the trips of the parent birds. A bird box at the back door of the house gave an opportunity for similar study and photographing, with a pair of house wrens as subjects.

Where it is necessary to make a time exposure on a sitting bird some method must be found to overcome the sudden start that the bird is almost sure to give at the opening click of the shutter. The writer has sometimes accomplished this by "stopping down," necessitating an exposure of fifteen to thirty seconds. If the bird gives one start at the opening click of the shutter and then sits expectantly, the movement is covered by such a small part of the time of exposure as not to show in the picture. Some birds, however, continue to move nervously, and there is no alternative but a "snap" with open diaphragm, which in such situations is too apt to mean a hopeless underexposure as well as no depth of focus.

One ingenious bird photographer, to overcome the start of a cedar waxwing at the shutter's click, hung a clock under the camera and left it until the bird became accustomed to the ticking, so that she took no note of the extra click of the shutter.

Perches have been arranged close to the nesting sites in such a way that when a bird lit on the perch it was depressed and closed an electric circuit, thereby setting off the shutter. For operating the camera from a distance a thread has sometimes been used in place of the long rubber tube and bicycle pump, though less convenient than the latter.

Such birds as hawks are very wary, and it is difficult for the photographer to conceal his presence, even near enough to the nest to operate the camera with tube or thread. One bird photographer secured very successful photographs of a pair of red-tailed hawks by passing a string over the nest, one end running to the camera and the other to a limb, so that when the birds stood or sat on the nest they drew the string taut and made the exposure.

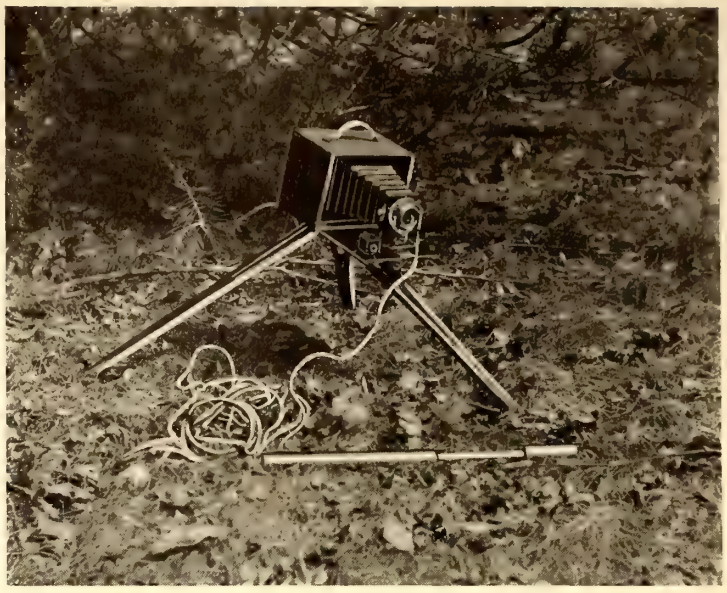
Where it is necessary to have the camera some distance from the bird to be photographed, the ordinary lens gives a picture too small to be of value. If the lens be a compound one, one part or the other is sometimes used singly as a "long-focus combination," whereby the size of the image is magnified considerably. The "telephoto" attachment is also used for this purpose, allowing a magnification up to three and one-half times the result obtained with the regular lens.

The focal plane shutter cameras have been a boon to the nature photographer, and results have been accomplished in the way of photographing flying birds, even to the extremely rapid wing movements of the hummingbird, which would otherwise have been absolutely impossible. With these cameras the operator can focus on his object right up to the second of exposure, and the quickness of the focal plane shutter is supposed to range well above a thousandth part of a second.

On the way to photograph a red-shouldered hawk's nest sixty feet from the ground

The experiences of the bird photographer include glad surprises, the securing of an occasional seemingly impossible, splendid photograph, the incidental acquisition of a great deal of delightful knowledge of the ways of the birds—also bitter disappointments, the hardest of work and the most extreme fatigue, with the occasional risk of life and limb on the face of the cliff, the dizzy height of the tree top, or the treacherous morasses of swamp or marsh, whither his quest leads him. At his

ease in his home he may operate the camera on his lawn, securing the family portraits of the chipping sparrow or robin, but he must also be prepared to remain for hours motionless and noiseless, in a cramped position, hidden in his blind in the woods, while the heat seems to be rapidly converting him into liquid lard, flies promenade over his nose, and myriads of mosquitoes hold family reunions and festivals on his defenseless person, and the bird whose portrait is so earnestly coveted tantalizingly meditates just outside of the camera's range. He must be prepared to try, day after day, for a satisfactory photograph of some subject that seems ever to just elude him, and to search in vain for a nest of some species that the "other fellow" got a fine photograph of.



Camera with long tube and bicycle pump for photographing birds on nests

One June the writer found a nest of the scarlet tanager, and the better part of four afternoons was spent in trying to secure a photo of the bird on the nest, but she frustrated every effort.

Hunting with the gun has exterminated the buffalo, the great auk, Labrador duck, and has almost exterminated most of the larger four-footed game, and many of the birds. It has robbed posterity of just that much, and has left the hunter richer in nothing but memories, which can hardly be altogether pleasant. Hunting with the camera destroys nothing, and leaves the hunter perpetual trophies of scientific and esthetic value, gives him the most healthful diversion, and insures delightful memories. The time must come when for hunting the camera largely, if not entirely, replaces the gun.

Ball-and-socket clamp for attaching the camera to a limb of a tree

Do not, however, imagine that, with the prevalency of camera hunting there will be developed the same sort of "sport" as obtains with gun shooting. I can not but think that, with the gun, there is a certain delight in the act of killing. It is indeed fortunate that nothing of the kind can arise in camera hunting. The camera hunter will have for his reward not the sense of bloodshed and life extinguished, but the reward of achievement. And this achievement must, in many cases, and certainly for very years to come, be unique and original in a very striking and wonderful manner.

Bird life, and indeed all animal life, is still largely unphotographed. This means that its most intimate phases are utterly unknown to us. The camera thus opens up a marvelous field for adventure and discovery which would seem well nigh inexhaustible.

And can it be pretended that there is not interest, and a world of interest, in the opportunity thus offered the sportsman? A new kind of sportsman, it is true, but a very real one, nevertheless, who will go out into Nature's wilds, into the fields and forests, and bring back to his study and his friends permanent records of bird life of unending interest and amazing novelty. Surely there is "sport" in work of this kind, just as there is value.

So much the future has in store for us in work of this description. Work that is a pleasure and work that is helpful too. Already much progress has been made in the art of bird photography and many interesting and valuable facts have been discovered. But there is still much to do, much to learn, much to ascertain. The camera hunter has the whole world before him.

Concrete Ornaments for the Garden and How to Make Them

I.—A GARDEN VASE

By Ralph C. Davison

THERE are but few materials that lend themselves to garden ornaments better than concrete. Like stone, it seems to harmonize with the surroundings and gives a dignified and massive appearance to the whole theme, which is most pleasing to the eye. This is particularly true if good, bold graceful outlines are given to the designs of the ornaments used.

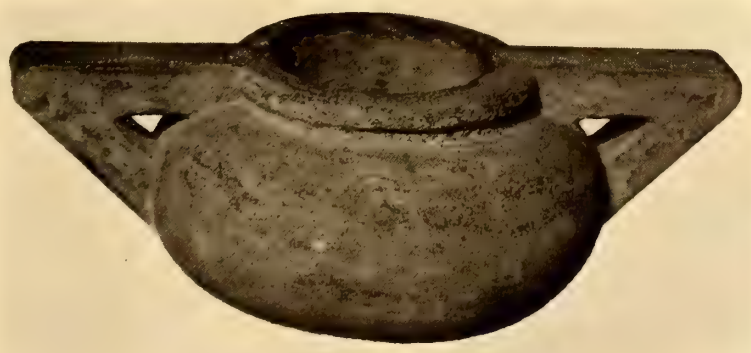
As a usual practise, concrete ornaments are cast in plaster or glue molds. If the piece is at all complicated the making of the mold in which it is to be cast is rather an expensive operation, especially so when there are but one or two pieces of the same design to be made.

The author has designed and made several vases shaped as shown in Fig. 1, which have been much admired. The method used in making them is simple and somewhat novel, inasmuch as it embraces a combination of casting and modeling. A description of how these vases are made may be of interest to those readers who are apt at making things and who wish to beautify their lawn or gardens at a minimum expense.

By closely following the instructions given in the detailed descriptions of the various operations used in the making of the vase illustrated, the reader will be able to produce a product equally as good as the one shown.

The first thing to do is to make the outer mold, as shown in Fig. 2. This can be made of heavy cardboard or very thin, pliable wood. In the design shown the greatest diameter is twelve inches, therefore the length of the piece of cardboard to be used for making the outside form must be at least thirty-six inches long. Make it thirty-eight inches. This will allow a lap of two inches, as shown. The height of the vase is six and one-half inches, therefore the piece should be thirty-eight inches long by six and one-half inches high. Form this into a circle and secure the ends by means of pins or by sewing them together with string. Now cut out a circular piece of cardboard twelve inches in diameter as shown at "A", Fig. 2; this is to be secured, by sewing, to the bottom of the outside mold, thus forming a circular box twelve inches in diameter by six and one-half inches high, as shown in the illustration. The next step is to make the core, or that part of the mold which forms the inside sides of the vase or the hole. By referring to Fig. 1 it will be seen that the core is six inches in diameter by five inches deep, therefore the piece of cardboard necessary to form the core must be twenty inches long by five inches high. This will allow a lap of two inches, the same as was given to the outside part of the mold. Form a circle of this piece, as shown at "B," and secure the ends in like manner as were those of the outside mold. Now with mucilage or glue secure small strips of heavy paper to the bottom of the outside of the core, as shown. Then place the core in the bottom of the round box, as indicated in Fig. 2. Locate it over the six-inch circle, which has previously been drawn on the inside bottom of the box, as shown at "A," Fig. 2, and secure it in place by gluing down the small pieces of paper which have already been attached to the outside of the core.

Now fill the inside of the core with dry earth, or, better still, sand. This is done to prevent the core from collapsing when the concrete is placed in the mold. Before placing the concrete the outside mold should also be bound around with heavy twine, as shown in Fig. 3, to prevent it from bulging. Now insert in the sand or earth, in the center of the core, a wooden plug about three-quarters of an inch in diameter, as shown at "a" in Fig. 3. Taper it as shown, and shellac and oil it well so that it will draw out easily from the concrete. Let it project about two inches out from the core. This plug will form the drainage-hole in the bottom of the vase. The mold is now complete, but before filling it with concrete it should be placed on a working-board, which should be at least eighteen inches square, as shown in Fig. 3. The next step is



The finished vase

the preparation of the mixture. In this case, owing to the fact that the piece is to be modeled, no stone should be used. The mixture should be composed of two parts of good clean sand, not too coarse, and one part of Portland cement. Mix the sand and cement together thoroughly while dry until a good uniform color is obtained throughout. Now

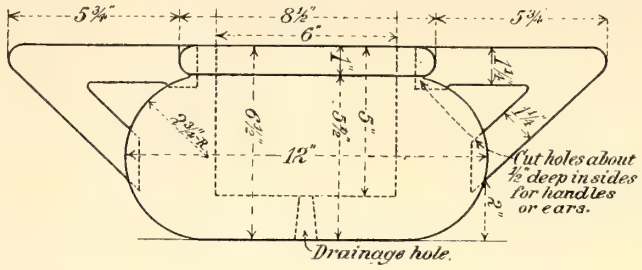


Fig. 1—Detailed drawing of cement vase

add enough water to this so as to make it of the consistency of putty or fairly stiff dough. Work it up well so as to procure a uniform consistency through the whole mass. Now place this mixture, in its plastic state, in the mold, ramming or tamping it down lightly as you place it in. Fill the mold flush with its sides, and level it off as shown at "A" in Fig. 2. Do not disturb the mold, which is now filled with the mixture, for at least two or three hours. After having set for the above length of time the concrete will be hard enough to allow of the removal of the outer mold, and the sharp corners of the concrete, shown at "A" in Fig. 4, can be roughly cut off by means of a sharp tool such as the edge of a good strong knife or a mason's trowel. The next thing to do is to make a template, or former, with which to model or shape the vase. This is done as follows: First procure a piece of fairly heavy sheet tin or zinc and draw on it an exact outline of the bottom half of the finished vase, as indicated at "B" in Fig. 4. Now cut a piece of one-inch-thick wood, as shown, and nail to this the tin template, as indicated. Hold the bottom part of this template firmly to the working-board and against the side of the concrete cast, as shown in Fig. 4, and by gradually working it back and forth around the piece the superfluous cement, which is still in a soft state, will be cut or scraped off of the cast and a good uniform outline will be produced around its entire surface. Now remove the plug "a" by means of gently twisting and pulling. Then place another working-board on top of the cast, as shown in Fig. 5, at "A," and then lift the piece up, at the same time firmly holding the two working-boards against it, as shown, and reverse the whole into the position indicated by "B" in

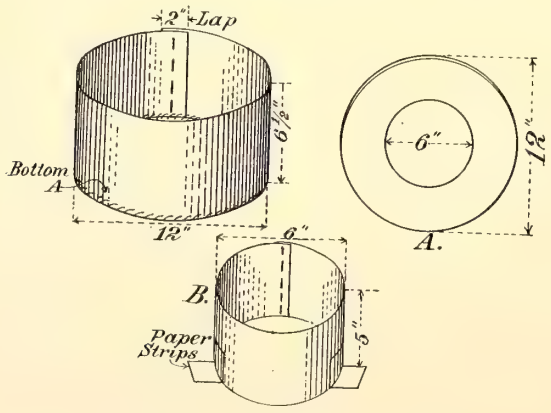


Fig. 2—Method of making outside mold and core

Fig. 5. Remove the board which is now on top, as well as the cardboard disk which formed the bottom of the mold, and proceed to model the upper part of the cast in the same manner as was explained for modeling or forming the bottom of the piece. A detailed drawing of the template to use in modeling the top is shown at "A" in Fig. 6. It will be noticed that the distance from the bottom to the top of this template is one inch shorter than the template used for forming the bottom of the vase. This is to allow for the depth of the ring around the top of the vase, as shown in Fig. 6. The shaded portion in Fig. 5 represents the superfluous cement which is to be cut away from the top of the cast before starting to use the template to form the finished outline of the vase. The square edges which will be left on the ring by the template, as indicated at "a" in Fig. 6,

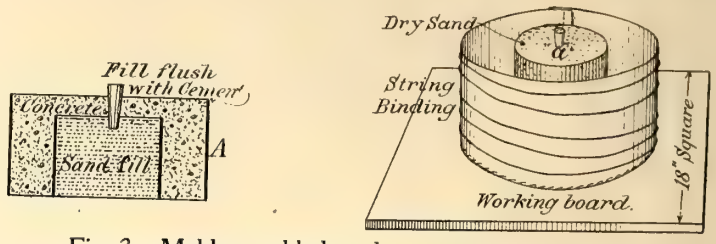


Fig. 3—Mold assembled ready to receive concrete

can be rounded off by hand, with a pointing tool or knife, as shown at "b." The body of the vase is now complete, and it can be set aside to harden. Do not attempt to remove it from the working-board for at least eight to twelve hours. for, as yet, it is in a soft state and must be handled carefully.

The next step is to cast the ears or handles. To do this a model must be made as follows: First procure a piece of wood and cut it into a triangle, as shown at "A" in Fig. 7. Make the two sides marked "1" and "2" seven inches long. Now lay out the outline of the handle on this piece of wood, as shown by the unshaded part at "B," closely following the

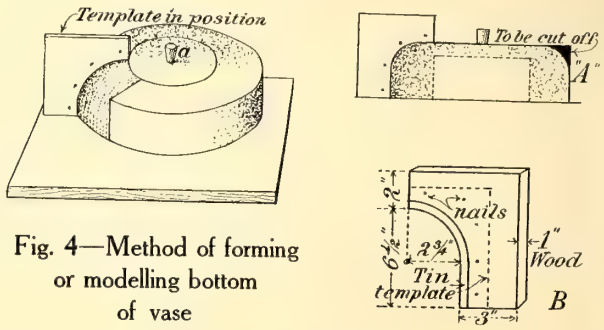


Fig. 4—Method of forming or modelling bottom of vase

dimensions given. The dotted lines on the two ends of the handle show a projection of about three-eighths of an inch. This length is added to the handle in order to insert it into niches or holes which are later to be cut in the sides of the vase for this purpose. A piece of wood should now be cut out to conform to the outline of the shaded portion shown in Fig. 7 at "B." This should be made of wood two inches thick or should be built up of two one-inch boards, as it forms the inner part of the mold for the handles, which are to be two inches wide. Secure this piece, by nails, in position on the triangular piece of wood, as shown at "C" in Fig. 7, and then nail lightly to the outside of the triangle strips of wood as shown. Be sure to have them lap as indicated. The tops of these strips should also be on a level with the top of the solid block "a," or a distance of two inches from the inside bottom of the triangular piece, as shown in the cross-section at "D" in Fig. 7. Shellac and oil the inside of the mold well to prevent the concrete from sticking.

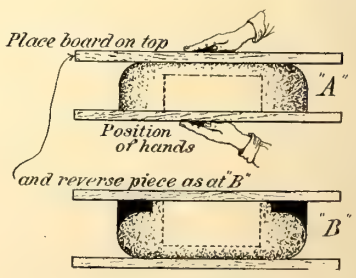


Fig. 5—Showing method of reversing cast

Now secure four pieces of steel wire one-eighth to three-sixteenths of an inch in diameter and from thirteen inches to fourteen inches long, and bend them to the shape shown by the heavy dark line in the plan drawing at "B," Fig. 7.

Lay these to one side and then start to fill the box or mold for the handle with a mixture composed of the same ingredients as was used for the body of the vase. Fill the mold first to a depth of one-half inch and tamp or press the

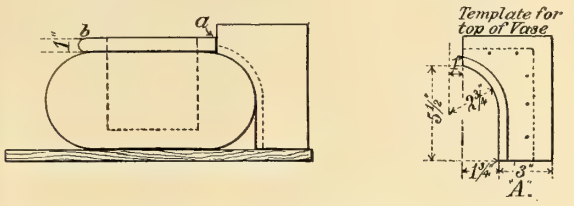


Fig. 6—Method of forming top of vase

cement down well, and then lay in, in the position indicated, one of the wires. Now lay in one inch more of the mixture, and press or tamp it down, and then place in the other wire, and fill the mold flush with the top as shown at "D" in Fig. 7. Trowel it off smooth and let it set for from eight to twelve hours, so that it will harden up well. Then carefully remove the sides of the mold; first removing side 3 and then side 1. After having removed these two sides the cast of the handle can be easily removed without fear of breaking it. Clean the mold out well and shellac and oil the insides of it again. Then replace the sides 3 and 1 and proceed to cast the other handle in the same way. After removing the handles from the mold wet them down occasionally so that they will become good and hard.

The next step is to cut holes into the body of the vase into which to insert and cement the handles. The sand or earth core, as well as the cardboard lining, should be removed and a line should be drawn across the top and down both sides of the vase at its center, as shown in Fig. 8. This line will show where the handles are to be located. Hold the handle

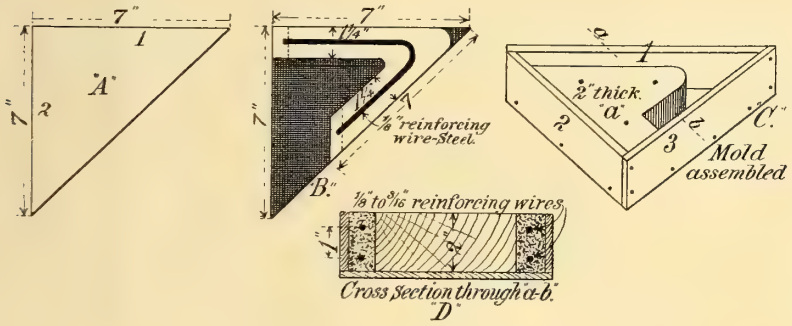


Fig. 7—Mold in which to cast handles or ears

in its proper position against the side of the vase, and with a pencil outline the position and shape of its two ends on the body of the vase. Now with a hammer and chisel gently cut out holes at these points about one-half of an inch deep, into which to cement the handle. Locate and cut out holes on the opposite side of the vase for the other handle to fit into it in like manner. Now by gently tapping with a hammer roughen up the ends of the handles, and then place both the vase and the handle in water or sprinkle them until they are thoroughly wet. Now mix some pure Portland cement and water together into a fairly thick paste, and trowel it well into the holes prepared for the handle in the body of the vase as well as on to both ends of the handle. Sprinkle both of these surfaces with water and then place the handle in position, firmly pressing it in place. True it up and scrape away the surplus cement, at the same time making a neat finish around the handle where it joins the vase. Hold the handle in position by binding it firmly in place by good stout string. Wedge the string up, as indicated in Fig. 8, to help

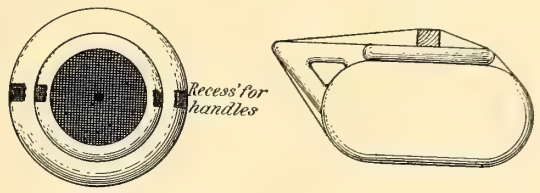


Fig. 8—Method of applying handles or ears

further tighten it. Wet the joint down well with water occasionally and allow the string to remain in position for at least twelve hours before removing it in order to allow the handle to be firmly cemented in place. Secure the other handle to the vase in like manner, and the vase is now complete.

If by any chance there should be any holes or marked irregularities in the surface of the vase these can be pointed or filled up with a mixture composed of the same ingredients as used in the body of the vase. A good smooth, fairly light finish can be procured by rubbing the whole surface down with coarse emery cloth. Then soak the vase in water and rub over its entire surface a thin coat of a mixture composed of one part of marble dust and one part of Portland cement. Let this dry out and then again wet down the vase. The oftener the vase is wet the harder it will be. Remember that water is a most important factor in all concrete work. One can never get a good bond between two surfaces if the parts are not thoroughly wet down. The dimensions given in Fig. 1 are merely suggestive. The same general directions as given above can be used for making a vase of almost any size and shape.

Birds and the Country Home

(*Continued from page* 353)

lawn in flocks, day after day, for six weeks, dine heartily, and start on again. The black-fruited wild cherry is one of the most useful for the food it gives, and the wood is of great value besides. You can leave such trees to grow along the lines of fences. In the spring I find that the barberry bushes have hardly been touched by the birds, but when the late snow storms come on and catch the robins, these berries frequently save their lives.

During cold weather, even the wildest of midwinter, you may have birds nearly as plentiful about your house as in midsummer. The secret is in giving them a few bones and chunks of suet, tied to your vines and trees. This food will cost you little or nothing, and it will make the birds very happy in spite of bitter weather. When tired of eating your suet these same birds will be scouting through the orchard and hunting out worms and eggs of worms hid in the bark of your trees. This sort of winter work is of great importance when we have had an invasion of caterpillars, or when the tent caterpillar has pasted his eggs on the branches. Among the birds that I find most easily drawn to my windows in the coldest days are the chickadee, nuthatch, downy woodpecker, common snow bird, and sometimes a robin will show up. You can afford to make a study of this business, and feed the birds just as you can your Holsteins and your Jerseys. In the summer I scarcely miss the berries and currants that are taken, although I make sure of my cherries. In the winter the presence of the birds is almost indispensable to our comfort. When I go to Florida the mockingbird is in my dooryard all winter, and the brilliant cardinal bird gives me a song, and Bob White comes to my very door calling me, while the shrike, beautiful as any of them, destroys all the grasshoppers and beetles he can eat.

A COLONIAL SVBVRBAN HOME
GVARANTEED COST $6000.
Designed By
Walker & Hazzard
W.H.B.

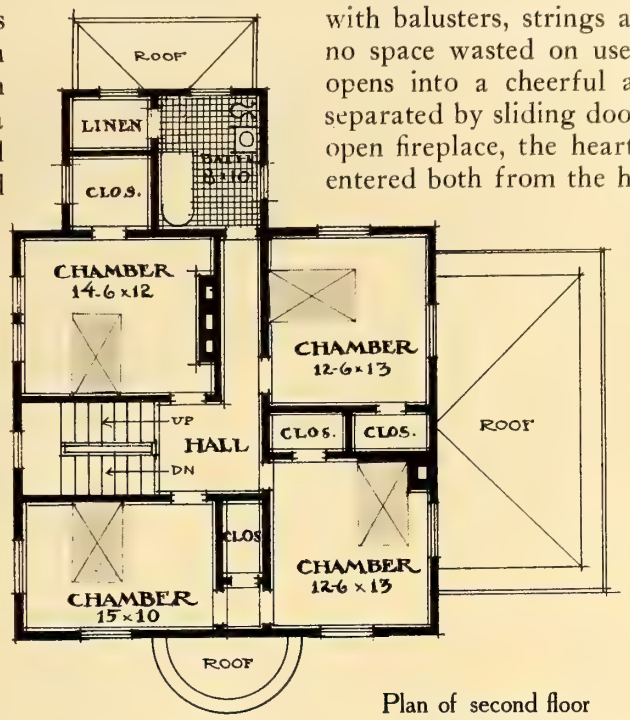
THIS compact little building is planned to be a "home" in every sense of the word. In order to successfully produce a home of moderate cost, it is essential that the architect and his client should understand each other and work in harmony. The production of simple, dignified, well-proportioned little houses is a problem requiring infinite care and study, and the results of this study are becoming apparent. The proper mental attitude which we should strive to attain is beautifully expressed by Tom Moore.

"I knew by the smoke which so gracefully curled,
Above the green elms, that a cottage was near,
And I said, if there's peace to be found in the world,
A heart that is humble might hope for it here."

If the architect and owner do not feel keenly this spirit of humility and willingness to accept the necessary limitations, good results are impossible. The only alternative, and a very desirable one for those intending builders who are willing to admit their ignorance of the subject, is the employment of an architect who understands and loves his work and who is capable of keeping the cost within specified bounds, allowing him freedom to design a house fitted to your requirement and planned for its particular location and environment.

This cottage is designed on genuine Colonial lines, with a simplicity and directness that is refreshing. Its entire freedom from ostentation and its dignity are worthy of study. It is to be covered with specially made clapboards laid ten inches to the weather and painted white. The roof will be covered with shingles dipped in a very dark green stain. The blinds will be painted the correct Colonial green.

The intention is to have the treatment of the interior as simple and consistent as the exterior. The trim will be an absolutely plain square-edged trim, with no dust-catching moldings. It will be finished throughout the entire house with a dull white enamel. The doors will all be birch, veneered, stained a rich mahogany, the hardware being old brass with glass knobs. The stairs will have mahogany newels and handrails, with balusters, strings and risers enameled white. There is no space wasted on useless narrow halls. The front door opens into a cheerful and spacious entrance-hall, which is separated by sliding doors from the living-room, with its big open fireplace, the heart of the house. The dining-room is entered both from the hall and from the living-room, and is a cozy, cheerful room. It is to have a paneled wainscot, plate-shelf and beam ceiling. Special attention has been given to the convenience of the kitchen and butler's pantry, and instead of the usual outside stone steps to the cellar, which generally conduct a respectable-sized waterfall to the cellar floor during a rain, there is a covered entry with upright door leading both to cellar and kitchen, and affording a convenient place for the ice-box, where ice can be put in without carrying it into the house.



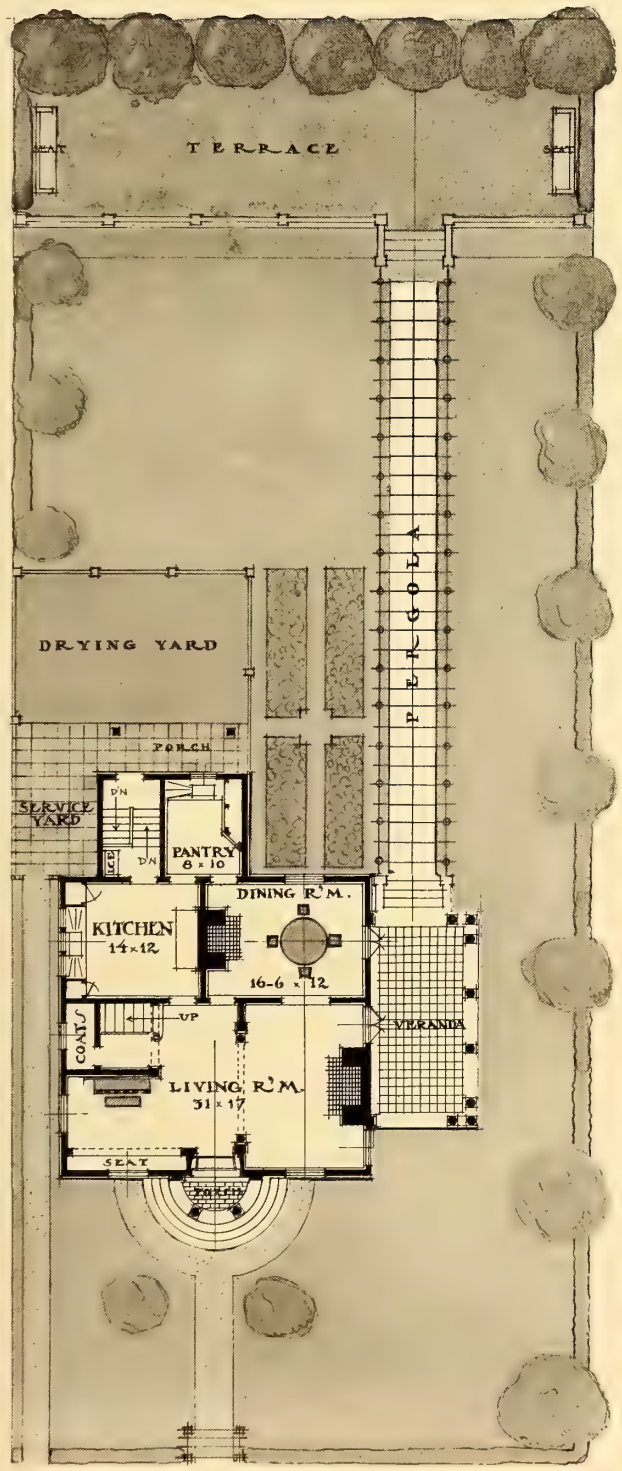
Plan of second floor

The bedrooms are so arranged as to secure plenty of light and full advantage of the views. The principal bedrooms connect; there is abundant closet room, a good linen closet, and—can it be possible!—a good-sized bathroom.

Here, then, is as simple and as good a house as one could wish to have. Its solution of the very difficult problem of designing a comparatively inexpensive small house is as simple as it is direct. And, in fact, now that we see how it is done, it is apparent that the solution of this problem, as is the case with many more intricate ones, is precisely along the simplest lines.

Good architecture is not, in truth, complicated architecture, nor is the most attractive house the one that is the most heavily loaded with ornament. Messrs. Walker and Hazzard need no more pretentious an opportunity than the present to show how true this is and how satisfying and how good the result may be; or, if you please, are any considerable garden accessories absent. The house is well supplied with adequate garden adjuncts. There is a service-yard immediately without the service department. Farther on is the drying-yard for the family wash. Beyond is a formal garden, if you desire to arrange the area in that way. And then the pergola, extending from the house to the terrace arranged at the rear of the lot.

A reputable builder, who does a great deal of this work in the suburbs of New York City, has guaranteed to build this house complete for six thousand dollars.



Plan of grounds and first floor

"Weldacre," the Home of George E. Smith, Esq.

Philips Beach, Massachusetts

By Josephine Balche

A CHARMING house, designed by Guy Lowell, architect, of Boston, Mass., is "Weldacre," the home of George E. Smith, Esq., at Philips Beach, Mass. It is delightfully environed with spacious lawns and overlooks the ocean. Its walls are built of red brick, laid in white mortar, and the shingles of the roof have been left to weather finish. It is a house of quiet beauty, its fine brick walls being built with rare taste and a discriminating appreciation of the uses of brick in domestic architecture. They are plain solid walls, it is true, but walls built to enclose a house, and bare of ornament, as brick walls often rightly are, save for the window arches and hoods, and a band of brick set upright between the horizontal courses, just below the windows of the second story. It is an interesting study in brick construction, since the chief effect of the exterior is directly due to its broad plain spaces and quiet massiveness. Yet not completely so, for the roof counts in the design, as every roof should in an isolated house such as this is. A fine, strong,

The stairs follow a semi-circular wall above the entrance doorway

The entrance front and doorway

sturdy roof it is, covering the whole house with its vigorous lines, and extending down below the wall summits that the protection it affords the vertical members may be as sufficient as it gives to the spaces within. It is broken only by the chimneys and by the dormer windows, front and back, strong, simple dormers thoroughly in keeping with the strength that speaks aloud in every part of the design.

Very charming, too, is the simple little entrance-porch, ample enough as a protection to the doorway and to the visitor who awaits admission beneath it; but no more, for no more was needed. But of agreeable resting-places without there is a plenty. Further on, to one side of the entrance-door, is a recessed porch that, opening into the living-room, corresponds in size and position with the great window on the left that admits light to the dining-room. The ocean front provides more ample areas. Here, in the center, is a terrace, open above, but protected with a great awning. In the center is a flight of steps to the lawn below, while on either side the terrace is enclosed within a balustrade. At one end is a covered porch that, like the porch on the entrance front, immediately adjoins the living-room, to which, indeed, it is an outer extension, as it were, having the real qualities of an out-door sitting-room.

The plan of the house is now sufficiently disclosed. The entrance-doorway leads directly into a shallow space, above which, by a step or two, is the entrance-hall. The main stairway rises immediately on the left, and ascends in a gentle curve to the second story, being carried across and over the doorway to the upper hall. The main hall of the first floor is divided into two parts by columns standing on pedestals. The first part is, in truth, but a corridor, from which rise the stairs, and from which the living-room and dining-room are respectively entered. Two more columns complete the individualization of that portion, and beyond is a spacious reception-room that is at once the center of the house and its chief ornamental apartment. It opens directly onto the terrace of the ocean front.

On the right is the living-room, a spacious apartment that extends from front to front, and which is directly connected with the two covered porches, one on each end. The dining-

The terrace and porch of the ocean front

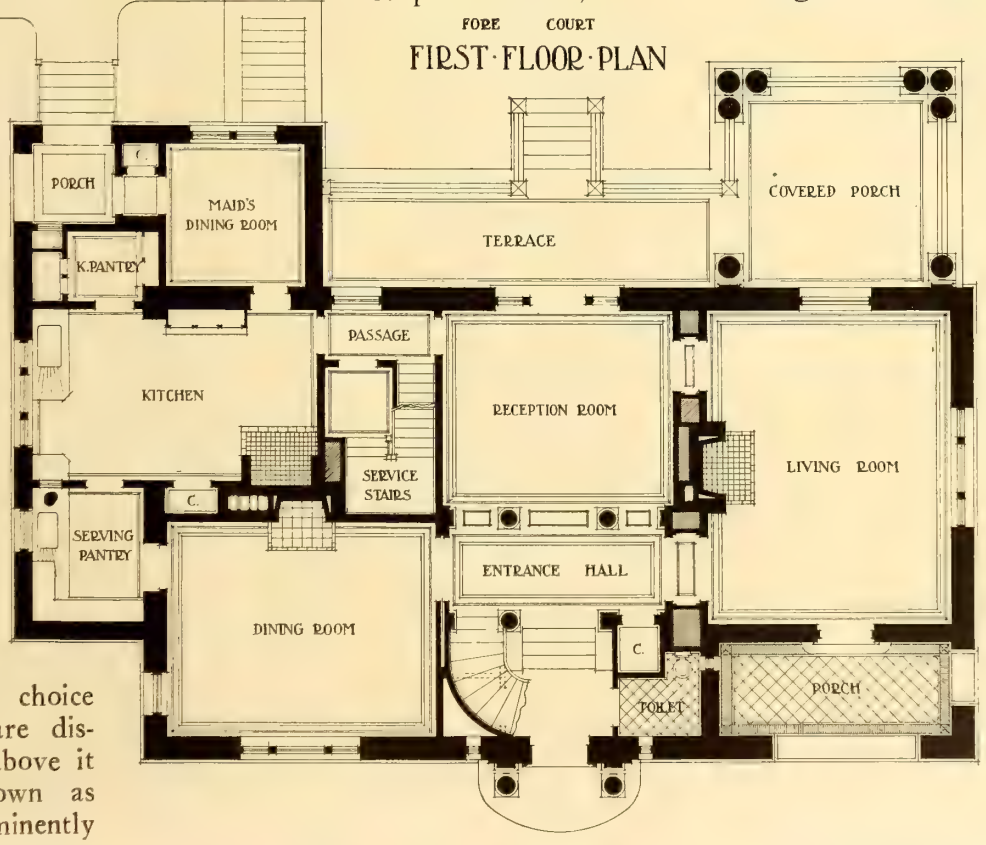
room is on the left of the entrance-hall, and has its chief window on the entrance front. All the rest of the house on this side is given up to the kitchen and service-rooms, the kitchen being immediately beyond the dining-room, but connected with it by a serving-pantry and juts out behind the front wall. Beyond the kitchen is the servants' dining-room, which, in its turn, abuts beyond the main house, and is a pleasant feature of the ocean front. The servants' stairs

The home comfort of the living-room

The dining-room is paneled in wood painted white, with a scenic frieze

and passages occupy an interior space.

The plan is thus eminently economical and direct, the chief rooms being assigned to the most important positions, while their relationship to each other shows a careful study of the available space. They are beautiful rooms, too, furnished in fine taste and charmingly decorated. The dining-room, for example, has a high wainscot of wood that is provided with a plate-rail on which many choice household treasures are displayed. The paper above it is of the kind known as "scenic," and is eminently decorative. The mantelpiece consists of a paneled frieze supported by coupled columns, while the facings and linings of the fireplace opening are of red brick and white mortar. The woodwork here, as elsewhere throughout the house, is painted white.



The second floor is, of course, given up to bedrooms and bathrooms. All these rooms are characterized by the fine taste shown in the apartments of the lower floor and are charming rooms in every way.

One does not need to be told where the charm of this house lies, for it is apparent upon its very surface, as well as speaks aloud in every room. Its

Steps and porch

The outdoor sitting-room

designing must surely have been an agreeable task to its architect, just as its occupancy must be a source of daily delight to its owner. And a greater success in house design there can hardly be. For the chief end of a house is to affords comfort and pleasure and convenience and rest to its occupants. It is to accomplish this end that the architect applies the best that is in him to the work at hand. As the illustrations show, Mr. Lowell, not less than Mr. Smith, is to be heartily congratulated on this fine achievement.

The rooms are most agreeably furnished

A water lily at noon

The lily closing at evening

The lily closed and sinking under water

Do Plants Think?

By Percy Collins

DO PLANTS think? The question is one that must often formulate itself in the mind of every flower lover. We wonder whether the silent leaves and stems miss and mourn the flower which we have just gathered; whether the flower itself feels the pain of approaching decay and death. And while we are fully conscious that our thoughts border on the sentimental, we fail in our efforts entirely to dispel them. If, at such time, we take the trouble carefully to examine our ideas, we shall probably find that we are more or less hampered by the popular conception—or, rather, misconception—that "plants are not really alive." This notion is a very common one. Not that plants are thought to be dead things in the sense that sand and stones are dead; but their life is regarded as something entirely different from, and far less real than, that enjoyed by members of the animal kingdom. It may be said at once that this notion is entirely erroneous. Plants are just as much living things as horses, dogs, cats and even men. They eat, they drink, they sleep; they have likes and dislikes; they overcome difficulties in the way of growth and development which can never have crossed the path of their parents, and which, therefore, call for original ingenuity; finally, at the appointed season, they reproduce their kind, and not infrequently make provision for the well-being of their offspring. In view of facts such as these we begin to realize that our question "Do plants think?" is not, perhaps, so wildly imaginative as we may have at first supposed. It may not ,indeed, be possible to answer it by a definite "Yes" or "No"; for men of science tell us nothing which suggests the conclusion that plants feel and plan after the precise manner of animals. We know nothing of plant nerves and plant brains. But a study of vegetable life affords us abundant evidence of plant ingenuity and prudence. We are convinced, too, that plants feel and know; and in the end we are almost forced to the conclusion that, in some mysterious manner of which we know nothing, plants possess a power of thought and discrimination not so very far removed from that which we see governing the actions of many animals.

In order that we may obtain a glimpse of what we may venture to term the cleverness and prudence of plants, let us make a brief examination of some phases of vegetable life. All those who own gardens and conservatories, or who will

A long-leaved sundew with freshly caught fly (magnified)

The young leaves of a sensitive plant—awake

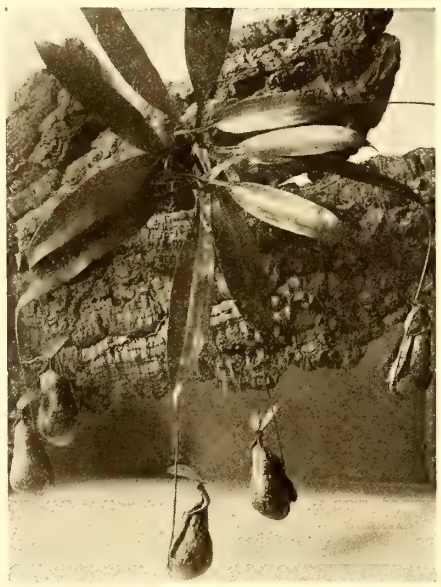
The same plant when leaves are closed up

take the trouble to look about them when they wander in rural districts, may verify most of the points raised. Let us begin with the food of plants. This, in the main, is carbon, which they extract from the minute particles of carbonic acid which float in the air around them. Also, as every one knows, plants require much water for their well-being. But in addition to carbon and water, plants also need small quantities of certain other chemical substances; and these they take up in solution by means of their roots. Most important of these dissolved substances required by the living plant is nitrogen. This brings us to an extremely interesting phase of plant ingenuity. Nitrogen, which we have seen constitutes a small but essential part of the plant's diet, may, for practical purposes, be regarded as what farmer's call manure. In other words, decaying animal substances of all kinds consist largely of nitrogenous substances. Most soils contain sufficient nitrogen to supply the needs of the plants which grow therein. But very wet and boggy soils are generally lacking in this necessary element, and the plants which manage to grow in such spots flourish only because they have solved the problem of obtaining nitrogen for themselves. In a word, they catch flies, kill them, and absorb their decaying juices. These clever plants, which procure their own manure, set about the business in several ways, all of which exhibit a marvelous ingenuity. The well-known sundews have leaves covered thickly with sticky red hairs. When a fly settles upon a leaf, to which it is probably attracted by the smell of the viscid secretion, its legs and wings are at once caught and held fast in just the same way as they would be by the gum of an ordinary fly-paper. Then the leaf begins slowly to bend over and clutch its victim, pouring a peptic secretion upon it by means of the red hairs, and ultimately absorbing the juices of its decay.

A Nepenthes pitcher

How the Virginia creeper takes hold

Now the reader may be inclined to regard this as a kind of mechanical action. But it has been shown by experiment that the sundew knows exactly what it wants, how to obtain this, and how to deal with it when secured. Mrs. Mary Trent observed closely the common American sundew, and found that the leaves would actually move away from the light toward insects which she had pinned in their vicinity—moving as much as an inch in order to grasp their prey. She found, too, that while the leaves curled over and digested the smaller insects which settled upon them, they discarded the bulky ones—allowing them to fall about the roots of the plants, thus providing for themselves a surface dressing of manure. Equally wonderful and suggestive of intelligence was the sundew's power of discrimination. They would digest tiny morsels of steak, when given; but cinders, bits of moss or straw, or little pellets of paper, they would have nothing to do with. The leaves seemed to realize that these objects were unfit for food, and refused to waste time and digestive fluid upon them.



A Nepenthes plant with pitcher developed on leaf tips

Other plants, such as the Venus's fly-trap of the South Carolina bogs, are still more expert. The end of each leaf in the case of this species is arranged to work after the manner of a gin. It is hinged in the middle, and the edges are beset with stiff, incurved bristles. Upon

A section of Nepenthes showing partly digested flies

A pitcher slit open to show mass of flies

A Sarracenias pitcher

Flies and a pitcher

The strength of a dead tendril

each half of the "trap" stand three delicate, almost invisible, spines. Should a fly alight upon a leaf, and so much as touch one of these, its doom is sealed. The two jaws come together with surprising rapidity, and the fly is a captive. So long as it struggles the trap remains closed, but when it is quite dead, and the leaf has sucked its juices, the trap slowly opens and is reset for another victim—although each leaf is capable of digesting at most only three insects.

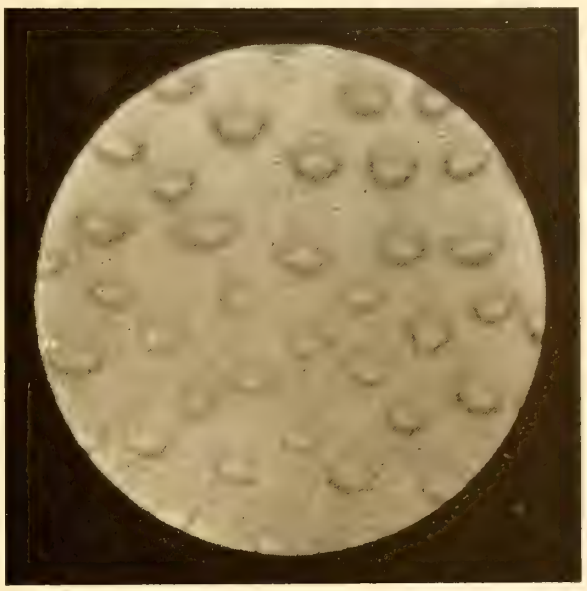
The Sarracenias of the Florida marshes represent another group of carnivorous plants. Their method is to drown their victims in pots of water, thus forming a kind of nitrogenous soup. The "pitchers," as the strangely modified leaves are called, somewhat resemble graceful flowers; and doubtless this likeness is not a chance one, for, like flowers, these leaves exist to attract insects. The difference is that whereas true flowers send away their visitors with a present of honey and a load of yellow pollen grains to be carried to a distant bloom, the Sarracenia lures its victims down into the pitchers from which there is no escape. The murderous leaves trade, as it were, upon the perfectly legitimate traffic which has existed between flowers and insects from time immemorial.

In the Old World the place of the Sarracenias is taken by the Nepenthes genus, whose leaves produce elaborate pitchers, often very beautifully colored. But in every case the method of capture is identical. The insect bustles innocently into what it takes to be a flower, little knowing that it has entered a death-trap. So ingeniously are these pitchers in their structure that it is well nigh impossible for an insect which has once entered to make its escape. If it attempts to crawl upward it finds that it is unable to do so, because the inner walls of the pitcher are beset with stiff, downward-pointing hairs. Flight, too, is out of the question, for our insect is in cramped quarters, while if he does succeed in soaring to the neck of the pitcher, he is almost certain to blunder against the kind of cover which partially closes it, and to be hurled back. So the fly generally ends his days in the water which the lower part of the pitcher contains. And its juices are slowly absorbed and digested by the numerous tiny stomachs which beset this part of the walls of the pitcher.

Let us now consider plants as climbers. We all know

Venus's fly-trap, the lower leaf has captured a fly

how necessary to vegetable life is a liberal supply of sunlight and fresh air; and when we realize how herbs and grasses, shrubs and trees, jostle each other, as it were, for room in which to spread their foliage, we are not surprised to find that many of them have acquired the habit of climbing upward, thus escaping the worst of the struggle. The methods of climbing may be classified in four groups: Firstly, the twisting of the whole plant round the support; secondly, the twining of the leaf stalks round the support; thirdly, the use of true tendrils, such as we see in the passion flower;



Microphotograph of lower internal wall of Nepenthes pitcher; showing the "stomachs"

lastly, the use of hooks or rootlets, as we find in the rose and the ivy. The wonderful efficiency of many climbing plants is little short of amazing. Darwin speaks of a climbing bigonia which ascended an upright smooth stick by spirally twisting round it and "seizing it alternately by two tendrils, like a sailor pulling himself up a rope hand over hand." Again, many of these arm-like tendrils and shoots have an extraordinary revolving motion in search of support. Some, such as the hop, turn with the sun's course; others, as those of the garden pea, revolve against it; and this fact shows us conclusively that the plants have, so to speak, a will of their own. Otherwise, they would all follow the common vegetable custom of turning toward the light. Darwin had under observation a tropical pea plant, the terminal shoot of which was thirty-one inches long; and this great arm revolved through space in a circle, searching for a support, making a circle of five feet in diameter and sixteen in circumference in a time varying from five hours and a quarter to six hours and three-quarters—thus traveling at the rate of thirty-two to thirty-three inches each hour. The familiar Virginia creeper is well worth observation. The tendrils of the plant bear each a number of tiny branches, like fingers, with hooked tips. These search everywhere for support. Some are thrust into cracks, while others grasp stems. Then, when the fingers have taken a hold, they swell out—wedging themselves into the crack or stiffening round the stem—until their weight-supporting power is increased to the utmost possible limit. Recently the writer selected a small tendril which had worked itself into a crack between the boards of a garden shed. The tendril selected was dry and withered—had probably been dead at least two years; yet it proved capable of supporting a weight of two pounds, as the annexed photograph bears witness. Thus, it is plain that the tendrils of this plant make deliberate preparation for the support of its long runners. Notice, moreover, that there is not merely resistance enough to uphold the plant under normal conditions, but a considerable reserve power to cope with adverse circumstances, such as rough, windy weather.

Certain plants answer directly to stimuli by movement, thus seeming to evidence their perception of what is going on around them. The best-known example is the sensitive

Tobacco plants close under the hot sun of noonday

On the approach of dusk the flowers open wide

plant which, as every one knows, shrinks from a touch. Moreover, it folds itself up in exactly the same way, and without being touched, at the approach of dusk. In common with many other plants, such as the clovers, it "goes to sleep" by folding its leaves and drooping its stems. But although we may speak of this phenomenon as "sleep," we are not justified in regarding it as identical with the slumber of animals. As far as an opinion can be formed on the subject, plants may be said not to need rest—at least during their period of active growth. So that, when we speak of a plant's sleep, we must not assume that its nutritive processes are suspended at this time. The plant is probably just as much awake as it is in the daytime. The folding up of its leaves is an ingenious arrangement for resisting the fall in temperature which commences at sundown. It is just as though the plant turned up its collar and buttoned its coat more closely round it preparatory to a night's watch; for scientific observation goes to prove that it preserves a normally active power of assimilation during its period of so-called "sleep."

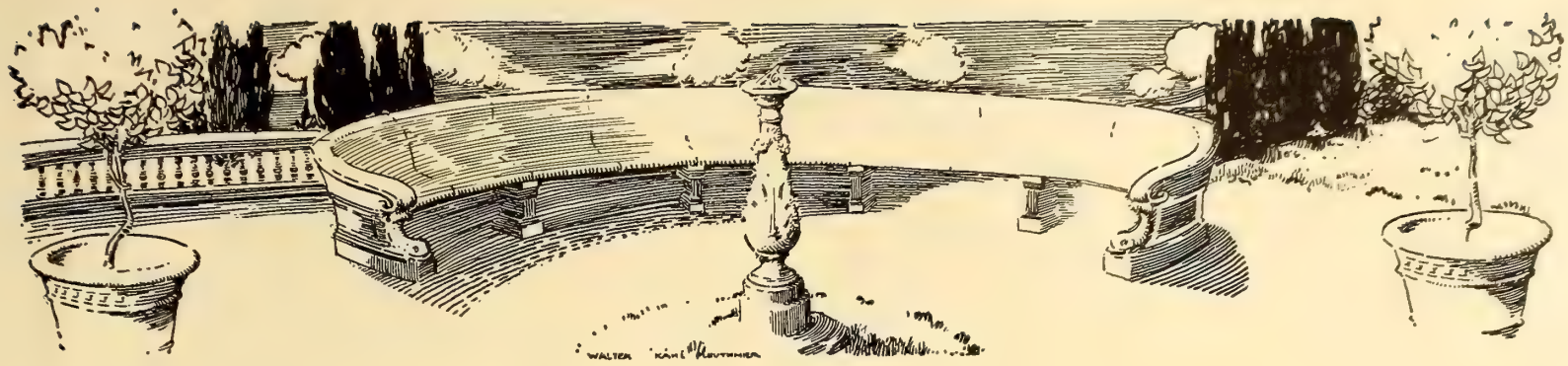
In speaking of the movements of plants, we have, of necessity, to take very much of what we see for granted. For example, in numerous instances we are able to realize that a flower opens or closes at exactly the right time to promote—if one may use the expression—its own interests; but what influences induce this opening or shutting it seems difficult to determine, if we deny to plants all sensible knowledge of their surroundings.

Let us, in conclusion, examine a case or two in point. Take first the beautiful white water-lily. During the hours of sunlight its blossom lies flat upon the surface of the water, its wonderful chalice fully expanded, and its array of golden stamens exposed to view. But as dusk approaches the flower's petals begin to close, and the flower itself sinks slowly beneath the surface of the water. The lily's day's work is over, and it has gone to rest.

Some would explain this movement by saying that flowers are extremely sensitive to the effects of light and the absence of light. But if we grant this, how are we to explain the absolutely opposite behavior of other flowers? Take the case of the tobacco plant flowers. At high noon, when the sun is hot and powerful, each bloom hangs its head with folded petals. But as the evening shadows fall the flowers seem to shake themselves from slumber, rise up, and expand into beautiful white stars, which shine conspicuously in the dusk long after the red and blue and purple blossoms have faded from sight.

Doubtless the true explanation of the phenomena is that while the insect helpers which secure cross-pollination for the water-lily are day-flyers, those which perform the like offices for the tobacco flowers are crepuscular or nocturnal. In this connection a somewhat remarkable fact was recently pointed out by a well-known writer on horticultural subjects, namely, that the newly produced tobacco flowers of bright color seem to have already adopted the habit of remaining open during the daylight and closing at night. Now as colored flowers are acknowledged to be of little use as lures for night-flying moths, this is precisely the reasonable course for these colored nicotianas to pursue. But how came they to realize this unless, indeed, they are vested with some power equivalent to that which we term "the power of thought?"

Considerations of space forbid us to dwell longer upon this fascinating subject. We have seen something, however, of the ways in which vegetables surmount difficulties and achieve successes; and whether we regard these manifestations as the outcome of actual volition, such as is exercised by the higher animals, or as directly promoted by the immeasurable intelligence which we believe governs all animate and inanimate things, the issue is scarcely affected. Plants may not think; they may not of themselves pursue one course of action to the exclusion of another. Yet each incident of their existence bears witness to the fact that they are controlled by the same omniscient intellect which governs the activities, not merely of the lower animals, but even of man himself.



Garden Notes

Spring Bulbs

SPRING bulbs should be ordered in September and can be planted at any time until the ground freezes, but early planting is an advantage as it give the bulbs time to make a good root growth.

Almost all bulbs sold in this country come from Holland, and, in some cases, it is better to order them direct from the Holland growers; the cost will not be much less but the quality is likely to be better.

Tulips

The soil for tulips should be rich. They are planted 4 to 6 inches deep on a layer of sand an inch thick, which prevents water from soaking the bottom of the bulbs. After the ground is frozen hard the bed should have a covering of leaves which are not removed until March. This is not to keep the bed from freezing but from thawing in warm winter days. Ordinarily tulips are planted 4 to 6 inches apart each way.

The single early tulips are commonly used for bedding, and several kinds are often planted in one bed, though a single color would, I think, be better. They are the first tulips to bloom and are useless after the first seacon. They cost from $1.00 to $40.00 per hundred.

The following varieties will be found satisfactory:

White.—Duc Van Tholl, Joost van Vondel, La Reine, L'immaculée, Milthiades.

Rosy.—Cottage Maid, Rosamundi Huyckman, Duc Van Tholl, La riante, Mrs. Cleveland.

Red.—Bacchus, Belle Alliance, Artis, Cramoisi Brilliant, Jules Janin.

Yellow.—Canary Bird, Chrysolora, King of Yellows, Yellow Prince, Montresor.

Red and Yellow.—de Haan, Duchess of Parma, Duc de Berlin, Kaiser Kroon, Duc Van Tholl Maximus.

The double early tulips are not so beautiful as the single ones, and I think it is a mistake to use them and miss the delicacy of the tulip cup which is spoiled by too many petals.

Parrot Tulips

Parrot tulips are large and tall and quite remarkable in color.

They are more lasting than the single early tulips, often increasing from year to year. The ends of their petals are often feathered. The price ranges from $1.20 to $27.00 per hundred.

Darwin Tulips

These also are fine in color and tall.

Albert Kellog is rose color. Black Knight is brown black. Bleu aimiable is purple. Donders is brown red. La Tulipe noir is black.

There is an almost endless variety of color and price. The common varieties cost 60 cents for ten, others up to $6.00 for ten.

Single Late Cottage Tulips

These are the best of all tulips because of their lasting qualities, their size (sometimes 3 to 4 feet high), and their distinct beauty. They bloom in May when the apples are in bloom.

Bouton d'or is golden yellow. Bridesmaid opens white and the margins turn pink. Carnation is white turning bright rose. Gesneriana spathulata is scarlet with blue eye. Retroflexa is bright yellow, reflexed petals. Vitellina, sulphur yellow with greenish veining, very fine.

The many species of tulips which are found wild are interesting and some of them extremely beautiful. They are rarely seen but should be planted by real enthusiasts.

These are good to start with:

T. clusiana, the lady tulip. T. fosteriana, brilliant scarlet vermilion with yellow or black center. T. greigi, low, red with black center. T. Kaufmanniana, the earliest of all tulips. T. oculis solis, the sun's-eye tulip. T. Sprengeri, the latest tulip, scarlet. T. Tubergeniana, very large, scarlet.

These vary in price from 30 cents to $30.00 for ten.

Narcissi

Narcissi are planted in the same way as tulips, except that they must not be planted in ground which has been dressed with manure within a year or two.

They last almost forever and should be planted in space where they need not be disturbed for many years. They increase in number and show no loss of vigor.

There are many varieties of extraordinary beauty and wonderful color. Some of them are tall with large trumpets, others short with almost no trumpets, as the poet's narcissus, some are pure yellow, others pale cream, cream and yellow, and paper white.

The single-flowered varieties are most beautiful in form, the double ones are little more than buttons. The cheapest varieties cost about a dollar a hundred, the newer and rare kinds are often as much as $60.00 for ten bulbs.

The following varieties, all may be called daffodils, are very good:

Barri conspicuous, pale primrose and deep yellow. Emperor, large pure yellow. Empress, yellow and pale cream. Horsfieldi, yellow and pale cream. Incomparabilis cynosure, with short cup. Incomparabilis stella, with short cup. Incomparabilis Sir Watkins, with short cup. Incomparabilis orange Phœnix and Incomparabilis sulphur Phœnix, the commonest form, the only good double Narcissi. Leedsi, Mrs. Langtry and N. major.

Narcissi:

Maximus. Poeticus, the poet's narcissus. Poeticus ornatus, Poeticus grandiflorus, larger and later varieties of the poet's narcissus. Jonquils, grandiflorus, single, yellow, several small flowers on a stalk, very sweet-scented.

Spanish and English Iris

The Spanish and English irises are bulbous irises, and should not be forgotten when one is ordering other bulbs. They are easy to grow and to plant, and bloom later than the other irises.

They are very inexpensive, costing only 75 cents a hundred in mixture, and when once established they seem to increase rapidly.

The Spanish irises are small; pale yellow, buff, brown and blue.

The English irises are larger, deep blue, white and purple.

In shape they are delicate and graceful, and suggests the orchid. The leaves are much like onion leaves.

Hyacinths

Hyacinths are popular bedding plants, but they are not so strong in color or so beautiful in form as tulips, and are much better in the house, where their pale colors and powerful perfume may be enjoyed to better advantage than outdoors. They are even poorer the second year than the single early tulips.

Their colors never seem to fit the exuberance of early spring.

Crocuses

Crocuses are indispensable and should have a special lawn to themselves. They can be bought in mixtures for about $3.50 per thousand. The named varieties are not particularly distinct, except that known as Cloth of Gold, which is the earliest and, because of its bright color, the most desirable.

Plant them in a hole about 2½ inches deep anywhere and they are sure to appear for two or three years, after that they may fail, especially if they are planted in a lawn.

CORRESPONDENCE

The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

By Alice M. Kellogg

Author of "Home Furnishing: Practical and Artistic"

AN ARTISTIC STUDY LAMP

"WILL you advise me," writes a correspondent from Rhode Island, F. D. G., "as to buying a lamp for my library that will be pleasing in outline and give a good light for the children to study by? The shade for the lamp is also difficult to decide upon as they are so gaudy in color. I prefer

A modern student lamp

to use kerosene oil if I can find a tasteful shape in a lamp."

The acorn design, shown in the illustration, is the most pleasing one for the library of this correspondent and it may be had in a soft, old brass finish. If the room is very large a double fixture is better. This is made with the same standard but with twin lights supplied by a center oil tank. The cost for the double lamp is $22.00 and for the single, $18.00. A plain light green shade, commonly called celadon, gives the best light for studying, and is also attractive with almost every kind of furnishings.

PAPERING A DARK HALL

"The hallway in my apartment is rather dark and is now covered with a deep red paper. The rooms opening out of it have green, blue and brown for their walls and I am puzzled to know what to do, in the event of my landlord giving me a new paper, to improve everything. Please suggest something that will make less distracting the outlook from the hall, and that will at the same time give a cheerful tone to the hall itself."—I. T., New Jersey.

It would be worth while to re-paper this hall to secure the conditions desired by its tenants. If it is very small, a plain paper will be the best choice, or one of the texture papers in fine lines. The "oatmeal" papers are taking the place of the old ingrain papers, as the former do not fade quickly. A higher grade in a plain paper is the silk fiber. Sometimes a narrow stripe or a closely set all-over pattern is a better choice than a plain paper. These points may be settled by trying several samples against the wall. The color to keep to is a warm buff, light enough to give a feeling of sunlight in the inclosed space.

WALL TINTS FOR A CUBAN HOME

"You will oblige me greatly by suggesting a color scheme for the first floor of my new home, such as may be made with water-color tints, as this seems the most suitable for the Cuban climate. There is an entrance hall, a back hall with staircase, parlor, dining-room and office."—A. G.

When the wall decoration is limited in this way to tinting the safest plan is use either buff or light green, as red, blue and yellow are too harsh. For the rooms described, the hall, dining-room and office may be in buff, changing the tone very slightly if some variation is preferred, and making the parlor wall a soft, light green. To secure the right tones, even in only these two colors, there must be skilful mixing of the color with white to get a light enough tint. As the floor of the hall is laid in colored tile in soft shades of terra cotta it would add to the wall effect if a stencilled border in the same colors was applied over the tint just above the baseboard, at the sides and under the picture-molding.

BATHROOM WALLS

An inquiry for a practical treatment for the walls of a bathroom comes from a reader in Idaho, Mrs. J. K. H. In reply, this department recommends oil paint in a deep cream or white, to match the woodwork, putting on enough coats to make a solid finish. Over this a stencil pattern in light blue, light green, pink or yellow may be applied, fitting it into the spaces to make panels. Such a border, however, cannot always be adopted, and sometimes it is necessary to use some kind of a covering to protect an imperfect surface. If a wall-paper is chosen there are pretty designs quite different from the old-fashioned tile effects, and in the better grade of papers they wear very well. A thin oil-cloth made especially for bathroom walls is now made in unglazed patterns and this makes quite an ideal appearance. Instead of a colored wall in a bathroom, the cream-white is now preferred in the best homes.

(*Continued on page xvi*)

Garden Work About the Home

By Charles Downing Lay

PLANTING BULBS IN THE WILD GARDEN

"CAN I plant bulbs under the trees in my wild garden? What kinds shall I use?" F. C. H. Your wish to plant bulbs in the wild garden is a reasonable one and easy to accomplish.

No flowers are more beautiful or give more joy than those of early spring. A snowdrop poking its head through the leaves in February means more to the spirit than all the purple and gold of September, and the first crocus, and the first daffodil mark the beginning of spring with more certainty than the calendar.

Planted in the wild garden, bulbs need almost no care. In fact, I think they do better if they are left alone. A rocky bank sloping gently to the southeast and shaded by deciduous trees like the maple, birch and oak, with a dogwood here and there, is the best place for such a garden.

The protection from wind afforded by the bank and the trees and the light shade which the latter cast are a help to the bulbs, no less than the carpet of leaves which fall from the trees above and keep them from freezing and thawing during the winter.

This is the season to start the wild garden, for spring blooming things can seldom be planted except in the autumn.

The soil should be good and rich but not heavily manured. It had better be spaded over to make it soft and mellow and easy to plant. The slope is an advantage because it is warmer, and the flowers will be earlier, and because the water will not stand there in winter to rot the bulbs, or the crowns of other plants.

At the bottom of the bank I should plant masses of winter aconite (Eranthis hyemalis), snowdrops, crocuses, in several varieties, grape hyacinths, blood roots, scilla, chionodoxa and trillium. Already we have provided for continuous bloom from earliest spring to the middle of May! These should be planted in irregular masses of two or three hundred bulbs with spaces left between for other things.

Higher up on the bank I should have the two beautiful early tulips, T. greigi and T. Kaufmanniana, with dodecatheon, dog's-tooth violets, and fritillary, leucojum vernum, ornithogallum, and puschkinia, planted in the same large masses with spaces between.

Toward the top of the bank is the place to put all the daffodils, narcissi and jonquils, with some of the late cottage tulips if it be not too shady.

The spaces which have been left between should be filled with ferns, anemones, mertensia, myrtle, pachysandra, etc., which will cover the ground in the summer making it green and pleasant to look at while the leaves of the bulbs are dying, and giving some protection to the bulbs.

Once planted this garden must be left alone. No work can be done there, except pulling up weeds, that will not injure some of the bulbs, and if any of the plants die out or are crowded out after a time, they can be replaced.

This is much better than planting bulbs in the grass, as is sometimes recommended, because when in the grass their leaves are sure to be cut before they have ripened, which is an injury to next year's flowers.

Any neglected wild spot can be used for a small spring garden—the expense will be little and the satisfaction great.

A grassy walk through the woods with bulbs planted on each side is ideal. Any tree on a small place can become a forest large enough for a woodland walk, if one uses imagination. Imagine the woods and the walk, but let the flowers be real and abundant!

PLANTS FOR A HEDGE

"We want to have a hedge around our place, which is in a small town in the northern part of Connecticut. The neighbors say that privet is not hardy, and we do not want to wait for hemlock. Can you suggest anything?"

The privet would probably be hardy in northern Connecticut, though it might be killed to the ground in a severe winter.

I would suggest that you use buckthorn (Rhamnus catharticus) which is absolutely hardy even in Minnesota and farther north.

Buckthorn is probably the best deciduous shrub we have to use for clipped hedges. It is better than privet in other ways than hardiness. Its foliage is no less handsome, and its tough short branches make a stronger and more impenetrable hedge.

Remember in clipping the hedge, to keep it always wider at the bottom than at the top. This gives the branches near the ground a better chance to grow, so that it will not get thin at the bottom. All hedges should be wedge-shaped or conical in section. It is a must better shape than the square flat-topped hedge.

OLD MILLSTONES

"There is an old millstone near the grist-mill which my father used to own, and I have often wondered if I could not use it somewhere about my new place. It is four feet in diameter, and must weight half a ton. The sentiment connected with it is considerable, because it has ground all the grain used in the country round about, up to thirty years ago."

Your millstone should certainly be rescued and put to some use. Millstones vary in different parts of the country, not only in the kind of stone of which they were made, but in size and in the lines which are cut on them to feed the grain in. Sometimes they are coarse reddish granite, sometimes a finer gray granite. It would be interesting to know whether they were made in the localities where they are found, or whether they were imported. The so-called French stones, which are built up of many small pieces cleverly fitted and bound together by iron bands, are made of soft buff-colored stone, which disintegrates rapidly when exposed to the weather. These, of course, are useless for garden decoration.

Your stone might be raised on a rough block, making a sort of table for afternoon tea, or for work in the garden; a small jet of water falling into the hole in the center would be an added charm, or the stone might be used as a base for a sun-dial pedestal, making the pedestal of stone, or of bronze, or, possibly, of wrought iron.

Millstones make very convenient carriage-blocks, and, in these days of low automobiles, they are just the right height to step on from the running-board.

I have seen then used as door-steps, but their round shape does not fit them very well for that purpose.

It might be used at the intersection of two paved paths, or as central point in a paved court. In such a position it would be interesting to have the points of the compass marked on it by means of bronze plugs or rosettes at the edge. This suggests its use as the ornamental base of a small flagstaff.

You are lucky to have such a stone, because they are being picked up rapidly by owners of country estates.

THE WILD CHERRY TREE

"There are several medium-sized wild cherry trees near our house, and because they give the only shade we have, we hesitate to cut them down, but we want to replace them with maples."

I do not understand your desire to cut down the uncommon wild cherries, and to replace them with the ubiquitous maple.

The wild cherry is an exceedingly handsome tree, and a good one to have near the house, because it does not give a dense, oppressive shade, but carries its leaves well out on its slender branches like an elm. It is graceful at maturity, as its delicate masses of foliage sway and recover under a stiff breeze.

Its spring and summer color is good, and it is one of the last trees to turn in the fall, when it assumes a pale lemon-yellow color.

The fruits ripening in August give another interest to the tree, as they are good to eat, and attract the birds. When the cherries are properly treated they make a pleasant tonic cordial.

The wood is to-day the the rarest and most valuable of all our North American woods. It is much used for furniture and for interior trim.

The disease known as black rust does affect it, and it is the regular abode of the tent caterpillar, but both these troubles are possible to control. Certainly such a fine tree is worth much effort to keep it in good trim, and it is probably less trouble than an elm tree when the bettles are thick.

Cottage Designs

THESE books offer to architects, builders, homeseekers and investors by far the most complete collection of plans ever brought out, while the price is so low as to place them within the reach of all who have an interest in the building of homes. The designs are compiled with a view to representing all grades of cost, from the simplest types of cottages, as illustrated in the first series, to the comparatively elaborate structures reaching to $10,000 or more, in cost, treated in the fourth series, so that examples are given covering nearly every requirement, with respect to cost, in inexpensive homes.

¶ No. 1. Cottage Designs with Constructive Details

A series of twenty-five designs of cottages, most of which have been erected, ranging in cost from $600 to $1,500; together with details of interior and exterior finish, all drawn to convenient scale, and accompanied by brief specifications. Illustrated with 53 full-page plates of floor plans, elevations and details.

¶ No. 2. Low Cost Houses with Constructive Details

Embracing upward of twenty-five selected designs of cottages originally costing from $1,000 to $3,000, accompanied with elevations, floor plans and details of construction, all drawn to scale, together with brief descriptions and, in many instances, full specifications and detailed estimates of cost. Illustrated by 61 full-page plates of floor plans, elevations and details.

¶ No. 3. Modern Dwellings with Constructive Details

A selection of twenty designs of artistic suburban dwellings erected in various parts of the country, at costs ranging from $2,800 to $7,000; embracing floor plans, elevations and constructive details, showing interior and exterior finish, and drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions, from photographs of the completed structures, and 61 full-page plates, of floor plans, elevations and details.

¶ No. 4. Suburban Homes with Constructive Details

Comprising twenty selected designs of attractive suburban homes, ranging in cost from about $3,000 upward; embracing floor plans, elevations and constructive details, showing interior and exterior finish, all drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions from photographs of the completed structures, and 75 full-page plates of plans, elevations and details.

One Dollar Each, Postpaid
(SOLD SEPARATELY)

MUNN & CO.
Publishers of Scientific American
361 Broadway, New York

Colonial Houses
FOR MODERN HOMES

A COLLECTION of designs of houses with Colonial (Georgian) details, but arranged with modern comforts and the completeness of the twentieth century.

Written & Illustrated by E. S. CHILD, *Architect*

They show large, correctly drawn perspectives, full floor plans, and complete descriptions, with estimates of cost. The designs are **new, original, unique, consistent**, but not stiff nor constrained. Made, not by an artist, but by an architect. They combine beauty of exterior with complete and convenient interiors, with kitchens, laundries, pantries and closets carefully and skilfully considered,

If you are at all interested in the subject, you will enjoy this publication.

Price, postpaid, $2.00

MUNN & CO., 361 Broadway, NEW YORK

For $5

American Homes & Gardens and *Scientific American* sent to one address for one year.

REGULARLY $6

The Multiplication of Power

There is no higher efficiency in the world than that of the American business man.

The multiplication of *power* in a business man—if he has the ability within him—depends upon the *increased number* of people whom he can, *by personal contact,* interest in his purposes.

He does this by telephone, and the multiplication of *the telephone's* usefulness depends on the *increased number* of persons whom he can reach.

In 1890 the Bell System had 200,000 subscribers' telephones in use. As late as 1899—ten years ago—it had only 500,000.

To-day it has 4,400,000—one for every twenty persons in this country—and is increasing at the rate of 500,000 a year.

Has the vast development of industries since 1890—the greatest period of advance in the world's history—*when America has advanced faster than all the rest of the world,* been the force that has built up this great, unified, efficient telephone service; or

Has the increased ability of the American business man to bring people to him from every locality, far and near, *over the Bell Telephone System,* been the cause of the multiplication of his power and his principality?

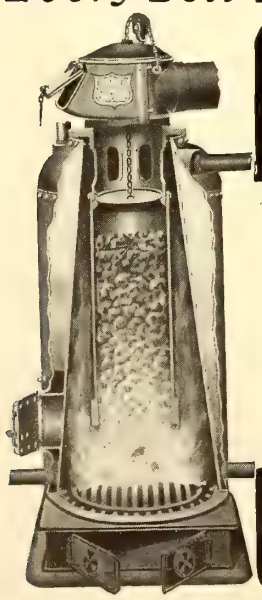
Whichever the cause and whichever the effect, the advancement of one is inseparably linked with the advancement of the other.

The business man's Bell Telephone, with its long distance and emergency advantages, is his most precious asset next to his capital itself.

The Bell Long Distance Telephone means as much to the home as it does to the office. It is the most marvelous convenience of modern times—if not all time—added to home life.

The American Telephone and Telegraph Company
And Associated Companies

Every Bell Telephone Is a Long Distance Station



Heat & Hot Water Any Time
Without a Night Fireman

made possible by a WILKS WATER HEATER in your greenhouse, barns, garage, brooders or anywhere that hot water and heat are desired. The WILKS IMPROVED COAL MAGAZINE is the only one that *feeds* itself and *regulates* itself, keeping the fire 10 consecutive hours, thus doing away with need of night firing and making

WILKS Water Heaters

as easily cared for as a kitchen range. Any desired degree of heat or temperature can be maintained. We *guarantee* these heaters to work right and give satisfaction if installed according to our plain directions. Anyone can install. WILKS HEATERS are strongly made of high grade steel and will not crack, as they have no sections—no bolts to loosen. Tested to 100 lbs. pressure. Successfully used for 50 years.

Write for Book giving size, price list, description, etc. In your letter state what you want a heater for and we will advise you what heater is best for your particular requirements.

S. WILKS MFG. CO., 3554 Shields Avenue, CHICAGO

Our well-equipped Book Department is prepared to recommend & supply

MUNN & CO.

BOOKS

Relating to Architecture, Ceramics, Decoration, Rugs, Furniture, etc. :: ::

NEW YORK

Problems in Home Furnishing

(*Continued from page xiv*)

GLASS TOP FOR A BUREAU

To protect the delicate surface of a highly polished mahogany bureau, as asked by R. T., Nova Scotia, a piece of plate-glass is cut the exact size, with the edges curved or left straight like the wood, and laid over it. Sometimes a handsome piece of lace is laid underneath the glass. If the mahogany, however, is finished in oil and rubbed down well it will stand a good deal of hard wear without any further protection than a linen scarf, and this may be as decorative as practicality will permit.

FRAMING JAPANESE PHOTOGRAPHS

An idea for framing some hand-colored Japanese photographs has been asked for by G. D. These may have mats made of the Japanese wood-paper that comes in a variety of shades, with a frame covered with the same material. Of course the color of the mat and frame should repeat the predominating tone in the picture. Another frame that suits these foreign subjects is a gray maple that resembles a bamboo in its finish.

A DINING-ROOM PROBLEM

"We have taken a house for the fall in which the dining-room is paneled with dark brown oak to the ceiling. The spaces are large and we are afraid the change from a papered room will not be agreeable. We have a good set of furniture in English oak, but can add new curtains and a new rug. What shall we select to help out the severity of this room?"—T. F., of Pennsylvania.

The paneled dining-room will be a very delightful room if attention is paid to color effect and interesting patterns in the floor covering, window hangings and portieres. Another item that that will prove helpful will be a large screen covered with a picture tapestry. The china closet may be arranged with pieces of glass and china so that these will also contribute to the general interest. If there is no plate-shelf a few pieces of copper and brass may be fastened above the doorways. Over-curtains to draw at night made of the Portuguese brocades are suggested for their bold, effective colorings.

JUST PUBLISHED

TWO FAMILY & TWIN HOUSES

CONSISTING of a variety of designs contributed by leading architects in all parts of the country, showing the latest ideas in planning this class of dwellings in city, village and suburbs, together with very complete descriptions covering all the latest improvements in sanitation, heating, lighting, etc. In presenting this collection of designs the editor has had in mind the large demand for improved house accommodations on comparatively small lot areas, and has endeavored to collate designs from all parts of the country, representing the handling of the subject by practising architects in their efforts to meet the needs of their clients in this respect.

Two Detailed Specifications and Sixty Designs

Elaborately illustrated and accompanied by full descriptive text. Size, 8x10¼ inches, bound in illustrated board. Price, $2.00, Postpaid.

MUNN & CO., 361 Broadway, New York

Plant Peonies Now— and Plant Farr's Peonies

These queens of the hardy garden never do so well as when planted in early fall. Planted now, they will bloom next spring; planted in the spring they will be a full year later in blooming. No flower quite equals them in splendor and stateliness—they give all the charm of the old-fashioned garden to any collection of plants. My collection of Peonies has come to be known all over the world as the most varied and dependable to be found. I have more than 100,000 strong roots ready now, in some 420 kinds.

Let Me Send You My Catalogue

of Irises, Peonies, Phloxes and other Hardy Plant Specialties. It tells you how my love for hardy flowers led me to grow them extensively, finding health and the joy of living in their care and companionship. All of my unequaled assortment of plants are fully described, and when you have read the book you will see how thoroughly I have come to know the flowers I love. Send today for free copy.

IRISES, PHLOXES and ORIENTAL POPPIES,

as well as Peonies, should be planted at once for best results. All are specialties with me.

BERTRAND H. FARR, 809E Penn St., Reading, Pa.
WYOMISSING NURSERIES

Every day is a fine day with a Krauss Outdoor Sleeping Coach

SAVE THE BABY

¶ But for the means of taking baby out-of-doors in all seasons many little lives are sacrificed.

¶ A mother's idea not only saved her own baby but many others.

The Krauss Outdoor SLEEPING COACH

—an open carriage on fine days—yet permits taking the baby out in any weather.

¶ The sliding curtains protect from wind, cold or dust, but admit the fresh air so essential in building a robust child.

¶ A comfortable, healthful crib on wheels. The baby may sleep out-of-doors in perfect safety. ¶ Best materials used throughout, including best hair mattress.

White enamel body with green denim curtains $25
With leather cloth curtains $30

Write for booklet containing illustrations and testimonials

KRAUSS MANUFACTURING COMPANY
5990 Euclid Avenue, Cleveland, Ohio

ASBURY PARK, N. J.

HOTEL WINDSOR

THIRD AVENUE AND HECK STREET

Accommodations for 150

OPEN JUNE 19

A refined patronage; superior table; moderate rates; near beach. Spend your vacation with us in the midst of all pastimes and pleasures. BOATING, FISHING, BATHING, ETC. This is the hotel you have been looking for. Write for particulars to

FRANK M. HANIGAN, Proprietor
FORMERLY OF HOTEL NORMANDIE, NEW YORK CITY
TELEPHONE CONNECTION

As to Perfection

One of the users of our pump in writing to us to tell us what he thought of it, used a phrase that set us to thinking. He said: "It is as perfect as things in this world can ever be."

That is the sort of praise a merchant likes to hear. Such a phrase shows that hearty good-will which can only come from entire satisfaction. And that is what the Rider-Ericsson Pump is made to give its users. We are quite ready to use the "reason why" style of advertising, except that in our case it is not wise for us to confine our statements to a few good points; we are not trying to sell our pumps because of a few points of superiority over some other contrivance, but because of their all-around rightness for their work.

We have a pump that will lift, drive and deliver water in the easiest, simplest, cheapest and most durable way. If you need such a pump we will be glad to go into every detail with you.

He who has watched the failing power of the windmill—while the breeze was slowly falling—and who had intended to use an extra supply of water on garden or lawn—will appreciate the value of the **Hot-Air Pump**—which is always ready and at your service. And when so vital a matter as the water-supply for house and barn depends on the pump it is worth much to have one which is "as perfect as things in this world can ever be."

Be sure that the name "REECO"-RIDER or "REECO"-ERICSSON appears upon the pump you purchase. This name protects you against worthless imitations. When so situated that you cannot personally inspect the pump before ordering, write to our nearest office (see list below) for the name of a reputable dealer in your locality who will sell you only the genuine pump. Over 40,000 are in use throughout the world to-day.

Write for Catalogue E, and ask for reduced price-list.

RIDER-ERICSSON ENGINE CO.

35 Warren Street	- - -	New York
239 Franklin Street	- - -	Boston
40 Dearborn Street	- - -	Chicago
40 North 7th Street	- - -	Philadelphia
234 Craig Street, West	- - -	Montreal, P. Q.
22 Pitt Street	- - - -	Sydney, N. S. W.

(Also builders of the new **"Reeco" Electric** *Pump.)*

Hot-Air Pump

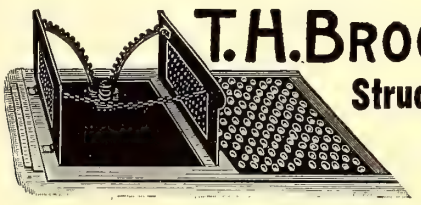
ARE YOU GOING TO BUILD?

The specification of Woodward-Eubanks Mantels by the Architect means satisfaction to the cultured home-builder

Natural beauty of materials and harmonious elegance of design form a combination of constructive elegance unsurpassed.

Our 75-page catalog, which will be sent free (enclose ten cents to cover postage), also gives an illustrated list of Gas and Electric Fixtures the most unique line on the market. We are manufacturers of Tiles, Grates, etc.

WOODWARD-EUBANKS MANTEL CO., Dept. D, Atlanta, Ga.



T. H. BROOKS & CO. CLEVELAND, O.

Structural & Ornamental Steel Work

FLOOR & SIDEWALK LIGHTS.

SEND FOR CATALOGUES.

Dixon's Silica Graphite Paint Lasts

And the reason why it lasts is because its pigments are inert. What have inert pigments to do with it? Our Booklet 106B will tell you.

JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.

Save the Lives of Your Trees—They Are too Precious to Sacrifice

If you are fortunate enough to have trees about your place, no doubt you have come to love them as living things. Tender memories of those who planted or have cared for them probably cluster around many if not all of your tree friends.

Trees are no longer common or cheap, and you could not replace the fine old ones at any reasonable outlay—even if you could, the substitutes would not be the same to you; they would lack the associations that made the old ones so precious.

Davey men and Davey methods can save your trees, if there is anything at all left to work on. Many of the achievements of the Davey corps of tree surgeons are little less than marvelous—healthy, hearty trees, that a few years ago were only shells, are living monuments to the efficiency of the Davey treatment.

John Davey, the Father of Tree Surgery Has Given the World a New Profession

If you have to engage a lawyer, you want a successful one; if you must call a physician or surgeon, you want one in whom you can place absolute confidence; if you employ a tree surgeon, you should have the best—not experimenters or men whose reputation in the profession has not been established in practice.

If you wish to save your trees, you need the services of tree surgeons who can give results. The Davey experts alone can thoroughly satisfy you. We are just now preparing a beautiful new booklet, which will be a veritable delight to the tree-lover, fully explaining our work. Its cost is too great to permit promiscuous distribution but if you have trees and are interested in their preservation, we shall be glad to mail you a copy without charge. Send us your name and address today, if you wish this booklet, for prompt attention addressing Desk 2.

JOHN DAVEY
Father of Tree Surgery

THE DAVEY TREE EXPERT CO., Inc.
(Operating Davey's School of Practical Forestry)

Main Office: KENT, OHIO
"The Home of Tree Surgery"

Eastern Office: TARRYTOWN, N. Y.
Address Nearest Office

HOME-MADE TOOLS FOR THE AMATEUR GARDENER

By Ida D. Bennett

ONE of the difficulties which confronts the amateur gardener in the laying out and working of the garden arises from the lack of proper or convenient tools. It is not always possible to have all one would wish in this line, especially if one has but a limited amount to spend on the garden and wishes to apply a large portion of this to the purchase of plants, seeds and bulbs; it, therefore, becomes necessary to economize, as far as possible, in the purchase of other accessories. There are, however, few tools beyond the spade, rake and trowel and a good reliable wheelbarrow but what can be evolved by one's own ingenuity and skill from the material already at hand on the place.

One of the first things which will be needed in the planting of the garden will be the garden line and reel; this may be substituted for by a ten-cent ball of wool twine and a couple of pointed stakes a couple of feet long, but for work not involving too many feet the pole and pegs will be found more practical; this is produced by taking a long strip of wood two or three inches in diameter and boring holes in it at a distance of a foot apart along the entire length. In the first hole at one end a stake two feet is fitted, the hole for this being large enough for the peg to work freely in its socket, the head of the peg being cut away enough to leave a shoulder for the pole to rest on and the extreme end having a nail driven through to prevent the pole slipping off. The remaining holes may be somewhat smaller, as the marking pegs do not need to be as large as the stakes at the head, and may be tapered somewhat at the end so that it may be driven in firmly, or it may have a shoulder and be secured in the same way as the head peg, but the tapered peg is the more simple.

In use the head peg is driven firmly into the ground where the center of a round bed is to be, the marking peg inserted in a hole which corresponds with the desired diameter of the bed—three feet if the bed is to be six feet in diameter—and the point held firmly on the ground as the end is carried around the circumference of the bed. Where the bed forms the center of a circular garden the peg should be removed a distance of three feet or more, according to the width desired for the paths and these marked out in the same way. Nor is the marking out of round beds all which may be accomplished by this handy tool, as straight beds may also be marked by setting the stake at one corner and the marking peg at the other and marking off distances by the figures on the pole.

An oval bed presents more difficulties to the amateur than most any other form, but may be easily managed by the use of a line and two stakes. First find the length and diameter of the bed desired and drive two stakes in each side of the long way of the bed a distance from the edge according to whether the bed is to be a broad or narrow oval. The farther the stakes are set from the edge the broader will be the oval. For instance, if a six-foot-long oval is desired, setting the stakes a foot from either end and using a cord eleven feet long will give an oval three and a half feet wide—a very pretty size. The cord is made long enough to go around these stakes and reach to the outside of the bed on one side only and tied securely, so that it can not stretch or slip, and the pegs should be driven into the ground very firmly. The cord is slipped over these pegs, not attached in any way, and a marking peg slipped inside the cord and the cord drawn out to its limit and the ground marked in the usual way. The

farther the pegs are set from the edge of the beds the wider will the oval be, so that beds of almost any diameter, from a circle down to a narrow oval, may be marked in this way.

Sometimes in laying out the garden it is best to mark the paths and let the beds fall within this circumscribed area, and a tool for this purpose sometimes comes very handy, and one may be made of a long pole with a three- four- or five-foot piece made to slide thereon by cutting a slot in it large enough to hold the pole and let it work freely. In this cross-piece holes are bored as in the pole for marking beds and sharp pegs thrust to mark the limits of the paths.

A handy tool in the garden is a carrier for plants which are to be moved from work-bench to house or garden, or from hotbed to garden. This consists of a thin, but strong board for bottom with narrow strips of wood nailed on the sides and a handle made from barrel hoops nailed securely to the bottom and sides. It should be at least a foot wide and eighteen inches long and can be made in a few minutes, and will save a great many steps. It will be better before using the hoops to soak them a few hours in water so that they will bend readily without cracking. Then as they dry they will fit to position and prove very durable.

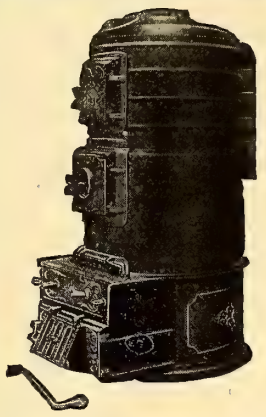
For marking long lines of planting where the stake and cord are necessary it will be found helpful if bits of white twine, cotton or even paper are fastened to the cord at the distance apart the plants are to stand—nine inches, a foot or two feet—whatever the distance may be. Gardeners often use a long pole with a crosspiece at one end with pegs in each end of this to mark off two rows at a time, this is dragged along the ground, marking the rows, but unless one is a remarkable straight walker the results are not likely to be satisfactory, and uncertain, wavering lines of planting are far from attractive.

A handy and indispensable tool for pressing down the soil over newly sown seeds is made from a smooth board of any desired size—about six by ten for the hotbed, ten by twelve or more for outside work—with a handle on one side made of a straight strip of inch-wood six or eight inches long and two wide, the ends curved down to about half an inch thick to admit of screwing to the board. This is a little thing, but one that comes very handy and if it is always at hand then the sowing will be properly done; otherwise this most important part of the work may be slighted.

Though not exactly a tool, but an appliance, the manure barrel is a necessity in every garden and for this a strong oil or molasses barrel should be selected. It should be given a coat or two of waterproof paint inside and out, and be fitted with a spigot on the side close to the bottom, and it will make for the longevity of the barrel if the bottom is reinforced with a coating of cement, as this will probably have to be done sooner or later, as barrels used for this purpose are prone to decay, but properly cared for will last for years, it will be found much easier to do it while the barrel is sound and good than after the bottom is on the point of falling out. Use a mixture of three parts sharp sand to one of cement, mix with water, using it quite stiff, and place about an inch in the bottom of the barrel, tamping it down until the water rises to the surface; when set, but before it becomes dry, give a second coat of clear cement, bringing it well up around the sides and about the spigot, if a wooden one is used, but not about an iron one.

In using the barrel place clean straw in the bottom—enough to come up above the spigot—and fill with manure to the top and then with water. The barrel should be placed

GURNEY HEATERS
FOR STEAM OR HOT WATER



Gurney Heaters are more and more preferred as their worth becomes appreciated. It is the unanimous verdict of all who use them that they combine a greater degree of durability, economy and efficiency than any other heater.

Back of each **Gurney Heater** is the best mechanical and engineering skill, combined with high-grade materials. No part is slighted in the making; hence, the **Gurney** gives uniform, dependable service.

The **Gurney Heater** is made for either hot water or steam. It consumes less fuel than others; assures complete combustion and an even and sure circulation of heat.

See that the **Gurney** is installed and avoid disappointment. If you wish absolute evidence of **Gurney** superiority, ask your neighbor who owns one. Can be installed in old or new buildings without inconvenience or disturbance.

Send for Illustrated Catalogue or consult your local dealer.

GURNEY HEATER M'F'G COMPANY

NEW YORK BRANCH: 12 East 42d St., New York City.
188-200 Franklin St., cor. Pearl BOSTON, MASS.

Distributors in the leading cities of the country.

For That Hand Rubbed Finish

WHAT kind of luck do you have trying to get fine results from varnish or shellac?

Did you ever get hold of a varnish that would dry hard in half an hour and wouldn't show scratches and heel prints?

Did you ever see a shellac that wouldn't lap, pull or crawl before you could get it spread?

Varnish is too long at it. Everything has a chance to stick to it and spoil all hope of a fine polish.

Shellac—spite of all you can do—dries too quick. Gets a mottled look, considerably worse than no finish. But *Try Under-lac.*

You'll have a finish that will do your heart good. Brilliant, lasting—all the fine effect of expensive, hand-rubbed work, with little cost and no trouble.

Under-Lac

is made from pure gums and denatured alcohol.

Is easily and quickly applied with no lapping, pulling or crawling. Dries *hard* in a half hour and won't show marks.

Use it wherever you would use shellac or varnish. With more artistic effect and at *less expense.* Over stain, dye, filler or on bare wood.

And it has absolutely no equal for preserving and beautifying linoleum, oil-cloth, etc.

A Test Package Free

Send this coupon for a free sample of Under-Lac. Prove what we say *at our expense.* Once use it and we know nothing can ever take its place for you. We are sure of the outcome if you just accept our free-test offer. Don't you think it's worth a two-cent stamp and a minute's time right now? Here's the coupon.

S. C. Johnson & Son
Racine, Wis.

"The Wood-Finishing Authorities"

S. C. Johnson & Son, Racine, Wis.

I accept your offer of a sample of Johnson's Under-Lac, better than varnish or shellac, also book edition AH-9. I agree to test the sample and report results to my paint dealer.

Name.....

Address.....

A Soda Cracker is Known by the Company it Keeps

It is the most natural thing in the world for exposed crackers to partake of the flavor of goods ranged alongside. In other words, a soda cracker is known by the company it has kept. On the other hand

Uneeda Biscuit

have been in no company but *their own*. When you open a package you find them so oven-fresh that they almost snap between your fingers as you take them from the package.

5¢

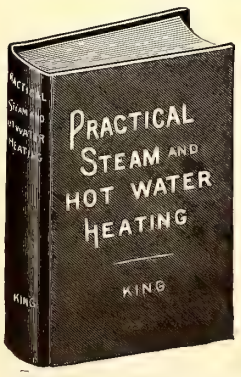
a Package

NATIONAL BISCUIT COMPANY

JUST PUBLISHED

Practical Steam and Hot Water Heating and Ventilation

JUST PUBLISHED



By ALFRED G. KING

402 Pages. Containing 304 Illustrations

Price $3.00

An original and exhaustive treatise, prepared for the use of all engaged in the business of Steam, Hot Water Heating and Ventilation

THE standard and latest book published. Tells how to get heating contracts, how to install heating and ventilating apparatus. Describes all of the principal systems of steam, hot water, vacuum, vapor and vacuum-vapor heating, together with the new accellerated systems of hot water circulation, including chapters on up-to-date methods of ventilation; fan or blower system of heating and ventilation; rules and data for estimating radiation and cost, and such other tables and information as make it an indispensable work for heating contractors, journeymen steam fitters, steam fitters' apprentices, architects and builders.

This work represents the best practice of the present day and is exhaustive in text, diagrams and illustrations.

CONTAINING CHAPTERS ON I. Introduction. II. Heat. III. Evolution of Artificial Heating Apparatus. IV. Boiler Surface and Settings. V. The Chimney Flue. VI. Pipe and Fittings. VII. Valves, Various Kinds. VIII. Forms of Radiating Surfaces. IX. Locating of Radiating Surfaces. X. Estimating Radiation. XI. Steam-Heating Apparatus. XII. Exhaust-Steam Heating. XIII. Hot-Water Heating. XIV. Pressure Systems of Hot-Water Work. XV. Hot-Water Appliances. XVI. Greenhouse Heating. XVII. Vacuum Vapor and Vacuum Exhaust Heating. XVIII. Miscellaneous Heating. XIX. Radiator and Pipe Connections. XX. Ventilation. XXI. Mechanical Ventilation and Hot-Blast Heating. XXII. Steam Appliances XXIII. District Heating. XXIV. Pipe and Boiler Covering. XXV. Temperature Regulation and Heat Control. XXVI. Business Methods. XXVII. Miscellaneous. XXVIII. Rules, Tables and Useful Information.

Valuable Data and Tables Used for Estimating, Installing and Testing of Steam and Hot-Water and Ventilating Apparatus are Given

MUNN & COMPANY, PUBLISHERS, 361 BROADWAY, NEW YORK CITY

American Homes and Gardens *and* Scientific American will be sent to one address for **$5.00**

Regular Price, $6.00

in a convenient place and on a support high enough to set a watering-pot under the spigot. The bottom of the barrel should not rest directly on the box or whatever is used to support it, but have three or four tile inserted under the rim of the bottom; this allows the air to circulate under and prevents the decay, and if the manure barrel is kept in order from year to year it is ready for use in the spring, and there is that much less to do and provide, and the cost of a barrel saved will buy a new rose or other desired plant.

THE USE OF WALL-PAPER

By Walter A. Dwyer

A PROSAIC subject, to be sure! A half dozen rolls of wood-pulp paper, printed in colors and slapped upon the wall with a paste-brush, by a man in white overalls and jumper. But is this all? It may be that it is high time we gave the matter more attention. The influence of our surrounding is potent upon us all, and harmony and art, or discord and garishness, on the walls of the rooms in which we live, may affect us more than we imagine. And, anyway, why not have a pretty home, while we're about it, if a little study is all that is needed? It wont cost a cent more.

From a decorative point of view no part of the interior of the American home is more important than the walls; no part of the house can be more quickly or cheaply transformed and beautified.

Wall-paper as a decorative material is ceasing to be regarded with disrespect in this country. We find it everywhere, even in the mansions of the wealthy, and the most magnificent of our metropolitan hotels. We find it in the White House and in the Harlem flat. The proprietors of the new Hotel Astor, seeking in vain for an appropriate decoration for one of their halls, finally secured a charming result by means of a special wall-paper of the flock variety, made to order for them by a Buffalo firm. It is in old rose and soft olive, bearing the thistle and crest of the Astors. We need none of us be ashamed of using wall-papers.

As a matter of fact, our modern wall-papers are the products of trained and artistic minds and hands. Designers, colorists and manufacturers are men who love their profession, and work with high ideals. They are doing the best the public demand will permit.

In considering the question of the selection and use of wall-papers, I will touch but briefly on the practical and sanitary side, and will deal rather with the artistic—color, pattern, methods of hanging, and prevailing fashions.

First, a word as to the practical side. Never employ a poor workman. He can spoil the finest paper by inaccuracy, slovenliness, or poor judgment in hanging. Insist upon his using a paste that will not sour or mold. There are sanitary preparations on the market which will not harbor germs or decomposition, and they add but little to the cost.

The arsenic scare is periodically revived by the newspapers, but these isn't much in it. Some States have good laws which reduce the danger to a minimum, and a dangerous amount of arsenic is seldom found in the coloring matter of wall-papers. A recent investigation, conducted under the auspices of the national Department of Agriculture, revealed a far less amount of arsenic in a representative selection of wall-papers than in black stockings, furs, and a dozen other articles. And the idea that green wall-paper is less healthful than any other color is an exploded fallacy.

In repapering, the removal of the old wall-

paper should be insisted upon as a sanitary precaution. If the paper-hanger does not own a machine for steaming it off, he should be compelled to scrape it off by hand. There is a law demanding this procedure in some States, and many cities, and it is a rule with some of the best of the local trades unions. The claim that a lining of old wall-paper makes the room warmer, or the paper fit better, is simply the pretext of a lazy workman.

Now as to color. Color is a marvelous thing in its effects and results. The color expert is a wizard. Color pleases or annoys, according to the way we use it. Wall-paper depends largely upon color for its decorative effects, and the subject of color is accordingly one worthy of our consideration. In fact, it is a subject worthy of deep study for its own sake; but it would be folly to attempt to treat it with anything like thoroughness in a brief aricle. A few principles, however, which have been determined by study and experience, may be referred to for use in our consideration of wall-papers.

In the first place, there are cheerful colors and depressing colors, whose effects differ but slightly with different individuals. Don't mind that the salesman says; never buy a wall-paper whose cloring is naturally unpleasant to you.

Colors may also be divided into warm and cold, bright and dull, light and dark. A little application of common sense will aid in determining which of these to select for a north and which for a south room, which for a well lighted and which for a poorly lighted room.

It should be remembered, too, that each room is darker toward the ceiling than at the floor, and to equalize the light the room should be decorated in lighter tones above than below, the darkest colors to be used in the floor coverings, the dado lighter, the side wall lighter still, and ceiling lightest of all. Wall-papers sold in combination—side wall, border and ceiling to match—are usually colored with this principle in view, and the borders are usually blended to match the colors of the side wall and the lighter ceiling.

It has also been discovered that the use of different colors affects the apparent size of a room to a certain extent. In general, the cooler colors are receding colors, and the warmer are advancing colors. Blues, greens and grays tend to make a room look larger, and reds, yellows and orange, smaller, just as a black dress makes a woman look smaller than a white dress. It is well to bear this in mind in selecting papers for large or small rooms.

Certain colors, too, are appropriate to certain decorative styles, such as Pompeian red, Empire green, Colonial yellow, and the Orientall colorings. The better class wall-papers are usually made in the proper colorings to suit period styles in designs.

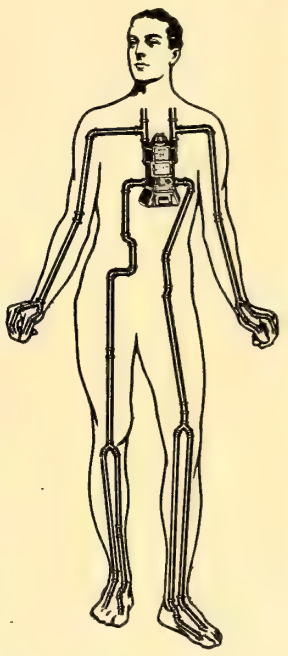
In repapering a room that is already furnished, the main thing, of course, is to select colors that harmonize with the rest of the room. But the subject of color harmony—harmonies of analogy and of contrast—is too extensive to touch upon here. Native or cultivated good taste is the safest criterion. In the main, fear not the use of much color, but abhor discord.

The different rooms in the house require different color treatment, in accordance with their character. A light tint is usually preferable for the parlor, bright effects for the chambers, and warmer tones for sitting-room and library. But this must also be a matter largely of personal judgment.

It is even more difficult to give advice regarding the selection of the proper patterns, beyond the stating of certain definite principles. The purchaser is usually confronted with so great a variety that selection is diffi-

Nature's way of heating

You cannot improve on nature's way. The most successful devices for the added comfort of mankind are those which rely in their operation upon the simple, direct, unerring principles of nature. Our way of Hot-Water heating a building is like the sending of blood through heart and arteries to keep the body warm.



AMERICAN RADIATORS & IDEAL BOILERS will keep your rooms as accurately at 72 degrees as the human body is kept at the temperature of 98⅗ degrees. Why not heat your building as nature heats your body? It's the least expense, with least care, and is the most healthful known—that is why IDEAL Boilers and AMERICAN Radiators are used exclusively in hospitals, sanitariums, greenhouses, laboratories, barracks, palatial homes, etc.

From Annual Report of the U. S. Quartermaster-General:

"All hot-air furnaces as they become worn out are being replaced by modern Steam and Hot-Water systems. Upon the recommendation of the Surgeon-General, the use of Hot Water is retained for all hospitals, whatever the latitude."

IDEAL Boilers and AMERICAN Radiators are now made in all sizes to fit smallest cottages, houses, stores, churches, schools, etc.—OLD or new—FARM or city. Prices are now so attractive and results so economical that no one can longer afford to put up with the nuisance or run the risk of old-fashioned heating.

A No. 3015 IDEAL Boiler and 175 ft. of 38-in. AMERICAN Radiators, costing the owner $125, were used to steam heat thiS cottage.

A No. 3-22 IDEAL Boiler and 400 ft. of 38-in. AMERICAN Radiators, costing the owner $215, were used to Hot-Water heat this cottage.

At these prices the goods can be bought of any reputable, competent fitter. This did not include cost of labor, pipe, valves, freight, etc., which installation is extra and varies according to climatic and other conditions.

These outfits save so much in coal and cleaning, in time and temper, that they soon pay for themselves. Will not rust out or wear out—are therefore an investment, not an expense.

Write us kind of building you wish to heat. Inquiries cordially welcomed. Valuable catalog sent free.

Showrooms in all large cities

AMERICAN RADIATOR COMPANY

Write Dept. 6 CHICAGO

cult, and, of course, the cost enters in. It is natural that the best patterns should be found in the highest priced papers. Good taste and personal preference must be determining factors here also.

A few facts can be mentioned, however, which may help in this respect. Vertical stripes tend to make a room look higher, and horizontal lines, such as chair-rail, plate-rail and picture-molding, tend to make it look lower and broader. It is the same as in the lines of dress, and every woman knows what that means. This should be borne in mind in papering a low-studded or a small, high-studded room.

The size of the pattern also affects room proportion. Large figures are safer to use in a large room than in a small one; but bold, glaring patterns are almost never good, except in the conventional hotel room, where there are no pictures, or occasionally in the upper third. The wall-paper should always serve as a good background for pictures, and obtrusive patterns are sure to detract from the effect. Two-tone patterns, in well-selected coloring, are, therefore, good almost everywhere, as, indeed, are solid colors. Cheap ingrains and cartridge papers, however, which fade in a few months, are an abomination, as are unsanitary crepes and crinkled or raw silks.

An intelligent understanding of the period styles is a good thing. An Oriental tapestry paper in a Colonial room, or a delicate Louis XVI. floral in a room full of Mission furniture, are decorative absurdities. Most of the rooms in the average American home, however, are not decorated and furnished in any exclusive period style, for purely practical reasons, so that this point may not be of such great importance, after all.

The selection of suitable patterns for the various rooms in the house is more important, perhaps; but it would be impossible to make a complete list of the different kinds of patterns appropriate to each. A few suggestions may be helpful, however.

For the parlor let us select a graceful, quiet pattern in light tints, either in the Colonial or one of the classic French styles. Too much gilt is always in bad taste. For the hall a bolder pattern can be used, such as the Empire wreath and torch, or heraldic pattern. There are, also, fine imitations of Gobelin tapestries —verdure and foliage effect—suitable for the hall.

For the dining-room a two-tone paper in warm colorings is suggested, or a good tapestry effect, preferably one showing fruit and flowers in the softened tapestry colorings. Tapestries and other soft, rich effects are excellent for the living-room or library, and an Oriental tapestry for the den.

Chintz and cretonne effects, stripes and dainty florals, are pleasing for the bedroom, and there are tile and aquatic patterns for the bathroom. In fact, your dealer will show you papers especially designed for every room in your house, even to the smoking-room, billiard-room, music-room or nursery.

There are several good kinds of wall coverings besides wall-paper, such as burlap, crash cloths, and Lincrusta, and other relief materials; and there are many kinds and grades of wall-papers. There are flocks—sometimes like felt, sometimes like panne velvet—for parlor or hall; damask and silks for the parlor; ingrains and duplex ingrains and pulps for living-room or dining-room; pressed and embossed papers for parlor or hall; water-proof materials for hall, dining-room, kitchen or bathroom; varnished papers for bathroom, kitchen or entry; hand prints and machine prints, single prints and twelve-colors, and all the grades of blanks, flats, golds and varnish golds, appliqués and flitters—terms which your decorator will explain. Each kind has its own particular purpose and value, except the cheapest blanks, which seldom possess any appreciable decorative merit.

The styles in which wall-papers can be hung are many, and variety and individuality can often be obtained by means of some original arrangement. Among the prevalent styles are the side wall and border, with or without a dado; the upper-third treatment; the crown, and the French panel. In some cases nothing is lost by running the side wall, from baseboard to ceiling, with a picture-molding at the extreme top. In bedrooms a pretty treatment is to use a delicately figured paper on the ceiling and on the upper part of the wall as far down as the picture-molding—eighteen inches or so—with a floral pattern or stripe on the lower part of the wall, the colors, of course, harmonizing. This treatment is especially attractive where there is a curved coving. Perhaps the best patterns for this purpose would be a dainty Dresden effect, above the flowers and ribbons of Marie Antoinette, or one of the modern lattice or trellis effects. Florals should always be in natural colors, though blue roses and pink violets, and other atrocities are to be found.

For the dining-room, where the chairs are being constantly pushed back against the wall, a dado is desirable, preferably unfigured, or in a simple pattern harmonizing with the paper above, and in a darker or contrasting color. At the level of the tops of the chair-backs a chair-rail should be used. Dados of waterproof material, in durable colorings, are also useful for the hall and stairway, where there is much wear and tear.

The upper-third treatment is very effective for some rooms, and has been exceedingly popular, though decorators tell me that it is ceasing to be a fad. It is particularly effective in dining-room or library. A simple pattern or solid color is used in the lower two-thirds of the wall, surmounted by a shallow shelf or plate-rail, bearing bric-a-brac. Above this can be used a pattern of considerable strength, the pictures being hung low, just below the plate-rail, with possibly one or two exceptions.

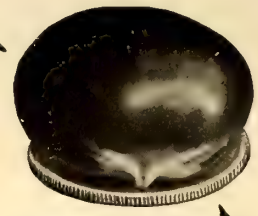
A good treatment for the dining-room is dark green burlap in the lower two-thirds, oak woodwork, and oak plate-rail, and a forest or vendure tapestry paper above, in tones of green harmonizing with the burlap. The lower part can be made even more durable, as well as decorative, by means of flat, vertical cleats of oak dividing this section of the wall into panels. The library can be treated in a similar way. A sort of frieze can be devised by arranging a series of photographs or pictures of the same size in a row just below the plate-rail, held in place and framed by little strips of oak.

The upper-third treatment is often effective for the chamber, using a plain stripe in the lower two-thirds, with a plate-rail or photograph-rail, and a bright floral above.

The crown is a development of the frieze. The border paper is so made that it exactly matches with the side-wall pattern at a given point, without a visible division of any sort, finishing off the decoration at the top of the wall with an arch, a cluster of flowers, tree tops or some similar effect. The crown is difficult to hang properly, and so has not been given the popularity that was expected of it. Intrinsically it is a very beautiful form of decoration, but pictures are apt to interfere with the effect, and it is frequently considered a little "too much."

The panel, either square or oblong, reaching from near the baseboard to near the ceiling, or used above or below the dado-line, is very artistic and very popular. Narrow borders and moldings are made for this purpose. Tapestry patterns can be very cleverly paneled

Grow Chestnuts Like This For Profit



Covers a 50c. piece.

Whether you have one acre, or a hundred, you can get bigger profits per acre from Sober Paragon Chestnuts than from any other crop you could plant.

Hardy, rapid, symmetrical growth; luxuriant foliage; spreading boughs; clean trunk; stateliness; immunity from parasitic blight—

These qualities have been combined and developed by science to a degree that closely borders perfection, in the new

SOBER PARAGON

Mammoth, Sweet Chestnut

A single crop, Fall of 1908, brought $30,000 (5,000 bushels @ $6.00 a bushel). And that orchard was only ***7 years old.***

The only large ***sweet*** chestnut in the world.

United States Pomologist, G. B. Brackett, says "The Sober Paragon comes the nearest in quality to the native chestnut of any of the cultivated varieties that I have examined. It is of large size, fine appearance and excellent flavor."

The Sober Paragon bears the second year—a 5-year old tree grew 500 burrs in 1 year. The nuts average 1 to 2 inches in diameter—and 3 to 5 nuts in a burr.

We offer 3 to 5-foot grafted trees for delivery Fall, 1909, and Spring, 1910. ***Orders being booked now.***

Testimony from growers, commission merchants, Forestry Experts, etc., given in our free booklet, together with prices and particulars.

We own exclusive control of the Sober Paragon. This copyrighted metal seal is attached to every genuine tree, when shipped.

Write today for the booklet. Address "Desk D."

GLEN BROS, Nursery, Sole Agents,
ROCHESTER, N. Y.

Richardson & Boynton Company

offer expert advice on heating problems without charge

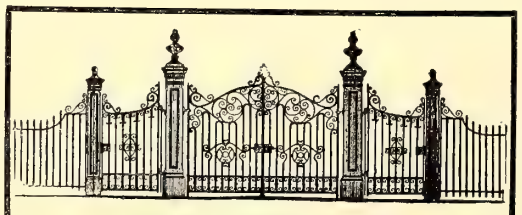
Write us about the kind of building you are to erect—we will recommend the heating method that will give you the best results at the least expense. We make three standards —steam, hot water and warm fresh air—our advice will be free from undue prejudice.

RICHARDSON & BOYNTON CO.

OFFICES: Established 1837

232-234-236 Water Street . . . New York
20 East Lake Street . . . . . Chicago
51 Portland Street. . . . . Boston

On sale by all reliable dealers



STEWART Iron Fence

Will beautify your grounds and furnish the desired protection at less expense than any improvement that can be made.

Combines dignity, symmetry, ornamentation and durability.

Backed by 25-years' experience, an established reputation, facilities of production, patents and special features that place it far in advance of all others.

Stewart's is synonymous with quality and is specified by leading architects.

Original designs in harmony with house and grounds is our specialty.

Catalogue, estimates and suggestions cheerfully supplied.

Agents Wanted

THE STEWART IRON WORKS CO.
1726 Covington St., Cincinnati, O.
The World's Greatest Iron Fence Works

Hardware Trimmings That Harmonize

If you are building a home be sure that you select hardware trimmings that will be in keeping with the architectural style. Your architect will be of assistance in determining the style — but *you* should acquaint yourself with the merits of

Sargent's

ARTISTIC

Hardware

It is harmonious in its details and can be had in all designs demanded by any particular style of architecture. Sargent's Hardware adds materially to the refinement of appearance in any home and affords satisfaction as long as the house endures.

Sargent's Book of Designs—sent free.

Will prove of invaluable assistance in choosing right hardware trimmings. Over 70 patterns are illustrated.

The Colonial Book—shows cut glass knobs, door knockers and other fittings in Colonial styles. This book also free on request. Address

SARGENT & COMPANY,
156 LEONARD ST
NEW YORK

for the dining-room or library, and nothing is prettier for the parlor than a soft, two-tone silk or damask effect, in light tints, framed in a little border or panel molding, the panels separated by a plain color to match. Moiré effects are often pleasingly used as panel fillers.

A form of wall-paper decoration which is becoming more and more popular every day is the independent frieze—a frieze or border, usually of a pictorial character, which does not match the side wall. Such a frieze should always be used with a very simple pattern in the side wall, or a plain color, the effect of the decoration depending almost entirely upon the frieze. The idea is artistically correct, the main decoration coming above the line where it is likely to be interfered with by pictures, which find a suitable background in the simple paper below. Many independent friezes are now on the market.

NEW BOOKS

BOX FURNITURES HOW TO MAKE A HUNDRED USEFUL ARTICLES FOR THE HOME. By Louise Brigham. New York: The Century Co. Pp. 304. Price, $1.60 net.

Miss Brigham's book may rightly be called remarkable, since it undertakes to show how, in the statement issued by her publishers, any one can make all the furniture needed for a city flat, a country cottage, a woods camp of a social service settlement out of the ordinary boxes that can be obtained from a grocer. The book hardly goes as far as this, but it does describe many useful articles that can be made from boxes, articles both useful and ornamental, indeed, and articles that almost any one can make, especially as the way to do so has now been shown.

The ordinary householder must open this book with astonishment, and think with regret of the many boxes thrown away when the whole house might have been furnished with them. Miss Brigham has certainly been fortunate with the boxes she has been able to obtain for her work, as well as ingenious in the applications she has made of them. The book is abundantly illustrated and the text, for the most part, consists of concise directions as to what to do. It is a book of stimulative interest, well calculated to arouse the industrious curiosity of the handy man and woman in the house, and it must prove a veritable boon for those who like to tinker and create.

THE GARDEN YARD: A HANDBOOK OF INTENSIVE FARMING. By Bolton Hall. Philadelphia: David McKay. Pp. 321. Price, $1.00.

Mr. Bolton Hall, who is quite militant in his belief that the farm is the only proper home, has here prepared a book that aims to help the man or woman who has to do the cultivation at odd times. It is difficult, in agricultural matters, to keep to a set program, and while this is but a small book it touches upon an enormous variety of subjects; so many, in fact, that it must surely require more than odd times at which to put the author's manifold suggestions into practise. But the author is not writing for one need, but for many, and he has wisely chosen to offer as much advice as possible in order to meet the greatest number of needs. Mr. Hall's practical suggestions are of the most practical kind; he presents a great array of facts in a very limited space and has produced a handbook of intensive farming of singular value and interest. It is a manual that one may read and profit by whether one is seeking support from the

You choose the colors—
Thread & Thrum Rugs
we'll make the rug.

YOUR own individual rug, different from all other rugs, and in a high-class wool fabric adapted to your own decorations. If the rugs in stock colors do not suit your requirements we will make one that will, either plain, self-tone or contrast. All sizes up to twelve feet wide, any length. Seamless, wool weft, reversible, heavy and durable. Sold by best shops or write for color line and price list to ARNOLD, CONSTABLE & CO., NEW YORK.

THREAD & THRUM WORKSHOP, AUBURN, N. Y.

Cattle Manure in Bags *Shredded or Pulverized*

Best and safest manure for florists and greenhouse use, absolutely pure, no waste, no danger. Write for circular and prices.

The Pulverized Manure Co.
21 Union Stock Yards, Chicago.

GINSENG The most valuable crop in the world. Easily grown throughout the U. S. and Canada. Room in your garden to grow thousands of dollars' worth. Roots and Seeds for sale. Send 4c. for postage and get our booklet A-V, telling all about it. McDOWELL GINSENG GARDEN, Joplin, Mo.

B & C

A CRAFTSMAN HOUSE FROM CORNERSTONE TO CHIMNEY-POT CURIOUSLY SUGGESTS THE CHARACTER OF ITS UNIQUE INTERIOR

THIS TYPE OF COUNTRY HOME

is a combination of art, comfort and economy, including fireproof features in hollow brick, with tile, slate or asbestos roofs. We design and build them anywhere, all under one contract.

All materials and unique devices prepared in our own shops, including woodcraft, metal work and wall reliefs.

No objection to building according to your own plans and specifications. We invite your inspection of many attractive houses and bungalows built in the last few years, also numerous sketches at our studios.

This work is in a class by itself. No increase in cost over ordinary types.

BUILDERS AND CRAFTSMEN COMPANY

38 WEST 32ND STREET NEW YORK

INVESTIGATE OUR BUILDING METHOD

"Men Ought Never to be Paid for Work that Machines Can Perform"

Just as modern reapers and typewriters are better, quicker and cheaper than scythe and pen, so "High Standard" Machine-mixed paints are better, quicker and cheaper than the hand-mixed-by-guess kind.

You can't afford to pay a painter to mix paints when Lowe Brothers paint machinery does it and a good deal cheaper—infinitely finer—saving time worth 25 to 50 cents an hour and insuring satisfactory paint of greatest covering capacity, brilliance and wear.

Lowe Brothers
High Standard
Liquid Paint

Gives Best Results

because the formulae are proved correct by thorough practical and theoretical tests—both, and by the use of most improved machinery—and most approved methods—many of them exclusive.

Determination to produce the best paint has been the watchword of Lowe Brothers for over 35 years. Is it strange that they have attained this end?

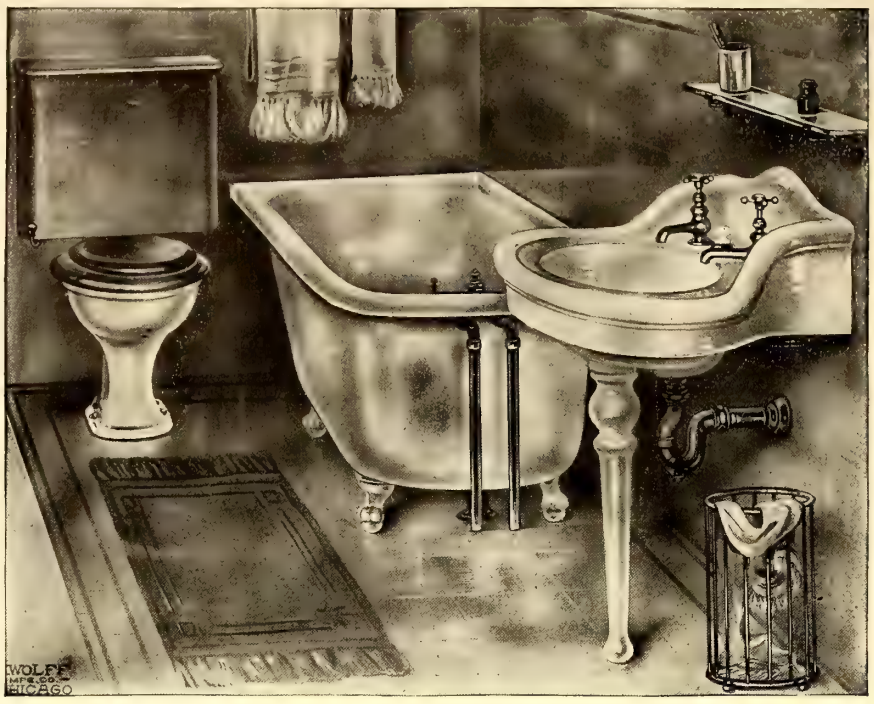
The "Little Blue Flag" on every can is the unquestionable sign of quality and economy and your positive protection in a line of paints for every purpose. "Little Blue Flag" Varnishes are equally sure to satisfy.

Remember this "Little Blue Flag" when buying paints and varnishes. Ask for "Owner's Responsibility" and for color cards and combinations.

THE LOWE BROTHERS COMPANY,

450-456 E. Third St., Dayton, Ohio.

New York Chicago Boston Kansas City



FIFTY-FOUR YEARS OF QUALITY

GUARANTEE LABELS

Guarantee labels on enameled ironware are various and are variously translated in practice.

Careful architects have come to understand that it is the spirit behind the guarantee that counts for most after all. The liberal, unquestioning, make-good policy behind every Wolff guarantee is responsible for unvarying Wolff specification as often as is the leadership of Wolff design.

L. WOLFF MANUFACTURING CO.

Established 1855

MANUFACTURERS OF PLUMBING GOODS EXCLUSIVELY

The only complete line made by any one firm

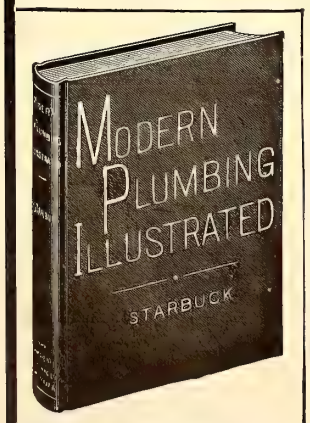
GENERAL OFFICES: 601 LAKE STREET } CHICAGO
SHOWROOMS: 91 DEARBORN STREET }

DENVER TRENTON

BRANCH OFFICES

Minneapolis, Minn.: 615 Northwestern Building
Kansas City, Mo.: 1209 Scarrett Building
San Francisco, Cal.: Monadnock Building
Cleveland, Ohio: Builders' Exchange
Washington, D. C.: 327-328 Bond Building
Buffalo, N. Y.: 77 Richmond Avenue
Omaha, Neb.: 1108-12 Nicholas Street

Modern Plumbing Illustrated



By R. M. STARBUCK

400 (10¼ x 7½) PAGES

55 FULL PAGES OF ENGRAVINGS

PRICE, $4.00

¶ A comprehensive and up-to-date work illustrating and describing the Drainage and Ventilation of Dwellings, Apartments and Public Buildings, etc. The very latest and most approved methods in all branches of Sanitary Installation are given.

¶ Many of the subjects treated in the text and illustrated follow in the next column.

MUNN & COMPANY, *Publishers*

SCIENTIFIC AMERICAN OFFICE, 363 BROADWAY, NEW YORK

SOME OF THE SUBJECTS TREATED

Connections, sizes and all working data for Plumbing Fixtures and Groups of Fixtures
Traps — Venting
Connecting and Supporting of Soil Pipe
House Trap and Fresh-Air Inlet
Floor and Yard Drains, etc.
Rain Leaders
Sub-soil Drainage
Floor Connections
Roof Connections
Local Venting
Bath Room Connections [etc.
Automatic Flushing for Factories, School Houses,
Use of Flushing Valves
Modern Fixtures for Public Toilet Rooms
Durham System
Plumbing Construction without use of Lead
Automatic Sewage Lift — Sump Tank
Disposal of Sewage of Underground Floors of High Buildings
Country Plumbing
Cesspools
The Electrolysis of Underground Pipes
Septic Tanks and Sewage Siphons
Pneumatic Water Supply, Rams, etc.
Examples of Poor Practice
Roughing — Testing
Continuous Venting for all classes of Work
Circuit and Loop Venting
Use of Special Waste and Vent Fittings
Cellar Work
House Drain— House Sewer — Sewer Connections
Plumbing for Cottage House
Plumbing for Residence
Plumbing for Two-Flat House
Plumbing for Apartment Houses
Plumbing for Office Building
Plumbing for Public Toilet Rooms
Plumbing for Bath Establishment
Plumbing for Engine Houses
Plumbing for Stables
Plumbing for Factories
Plumbing for School Houses, etc. [by Electricity
Thawing of Underground Mains and Service Pipes

soil as the author advises or not. Mr. Hall offers some good advice, but nowhere is he more practical than when he says: "It won't be enough simply to read this book; that won't make you a gardener; but if you study it while you are working on the land, and use your judgment and common sense, in one season you will be able to teach most of those whom you now have to hire as expert gardeners at three dollars a day." Perhaps not quite that; but the book is one obviously to be studied in connection with practical work, and this done, its highest value will be obtained.

ORIENTAL RUGS. By Arthur Urbane Dilley. Boston: A. U. Dilley & Co., Inc. Pp. 80. Price, 50 cents.

This is an admirable handbook of a very difficult subject. The author's main purpose is to help the lovers of good rugs to select them discriminately. This he does in a very brief and direct way, and has produced a model monograph which should be consulted by every one who has a real interest in rugs. Mr. Dilley's advice is of the most practical kind, and is well intended to safeguard the purchaser of rugs against fraud and misrepresentation. The book contains numerous photographic illustrations of rugs, which are amply described, and forms a most convenient and helpful handbook.

A HISTORY OF ARCHITECTURAL DEVELOPMENT. By F. M. Simpson. Vol. II. New York: Longmans, Green & Co. Pp. 404.

This new history of architecture, of which the first volume was published a year or so ago, has now reached the second volume, which deals with the Medieval Period. The interest awakened in this work on the appearance of the first instalment will be heightened by the present volume, which deals with one of the most complicated and widespread phases of architectural history. Mr. Simpson's method is wholly his own, and consists in tracing the development of architecture through the planning, construction, materials and principles of design, with reference to the influences that helped to shape this development. All these, and other topics, are discussed in separate chapters, the detailed history of the architectural development of the various countries being relegated to secondary chapters. This method gives a freshness to his book and entitles it to an honored place in the library of every architect as well as to the consideration of every lover of the noble art of building. The author is to be congratulated on the substantial progress toward the completion of his great undertaking that has been manifested in the present instalment.

THE BOOK OF THE COTTAGE GARDEN. By Charles Thonger. New York: John Lane Co. Pp. 92. Price, $1.00 net; postage, 8 cents.

A modest, but extremely useful little volume of English origin. It is designed as an aid to the owners of small places, and admirably fulfils its purpose. The larger part of the book is concerned with the hardy flower garden, which is precisely the kind the owner of the small place will derive most enjoyment from. Room is, however, found for a chapter on the vegetable garden, and an additional one on the orchard. It is a "practical" book in the most practical sense of the term, and merits warm commendation. The lists of plants will be found useful, and the photographs are at once beautiful and helpful.

The Oil that Turns Minutes to Miles

Vacuum MOBILOIL relieves your automobile of wear and friction, and leaves it free to wrestle with the minutes and the miles. It makes perfect lubrication a scientific certainty, and saves paying for experiments and accidents, disguised as repairs.

VACUUM

MOBILOIL

is made in six different grades for various kinds of automobiles. One of these grades is the *one oil*, the label of which guarantees it to be exactly suited to the requirements of your car.

Do not experiment. Write for free booklet, listing every automobile made and showing grade of MOBILOIL necessary for its perfect lubrication. Also contains track records to date and other facts of vital interest to motorists.

MOBILOIL, in barrels and in cans with patent pouring spout, is sold by dealers everywhere. Manufactured by

VACUUM OIL CO., Rochester, N. Y.

D & C LAKE LINES — The Great Lakes Trip

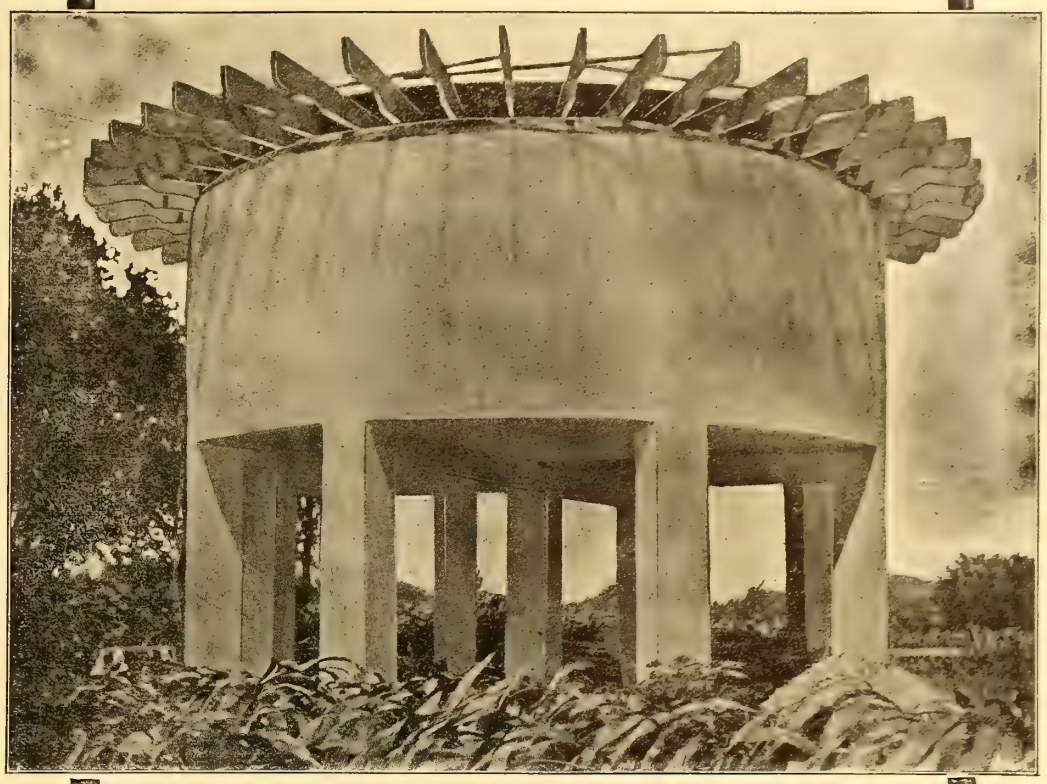
All the ports on the Great Lakes are reached regularly by the ten large steamers of the D. & C. Lake Lines. This fleet of fast, safe and comfortable steamers operate daily trips between Buffalo and Detroit, Cleveland and Detroit, four trips per week between Toledo, Detroit, Mackinac and wayports, and two trips weekly between Detroit, Bay City, Saginaw and wayports. A special steamer leaves Cleveland twice a week direct for Mackinac, stopping at Detroit every trip and at Goderich, Ont., every other trip. Send two cent stamp for illustrated Pamphlet and Great Lakes Map. Address: L. G. Lewis, G. P. A., Detroit, Mich.

P. H. McMILLAN, Prest.
A. A. SCHANTZ, Gen. Mgr.

Rail Tickets available on all Steamers

DETROIT & CLEVELAND NAV. CO.

FLOORS — NOTE CONTINUOUS BOND — ROOFS



A concrete tank erected on estate of Edmund Tatham, Katonah, New York

Frederick J. Sterner, Architect - - New York
De Lancey A. Cameron, Builder - - New York

Tank designed for storage supply of 15,000 gallons, built entirely of concrete reinforced with Clinton welded wire. Before roof was placed over tank, and during winter months, ice 10 inches thick formed on water stored therein. No cracks or leakage have developed.

Clinton Wire Cloth Company
CLINTON, MASS.

Ceilings — Partitions

Fireproofing Departments:
ALBERT OLIVER, 1 MADISON AVE., NEW YORK

WASHINGTON: Rosslyn Supply Co., Colorado Building
CHICAGO: Clinton Wire Cloth Co., 30-32 River Street
BUFFALO, N. Y.: Buffalo Wire Works Co., Inc.
CLEVELAND, OHIO: Carl Horix, 428 Garfield Building
ST. LOUIS: Hunkins-Willis Lime & Cement Co.
SAN FRANCISCO: L. A. Norris, 835 Monadnock Bldg
SEATTLE: L. A. Norris, 909 Alaska Building
SYRACUSE, N. Y.: National Construction Company

JUST PUBLISHED

The New Building Estimator

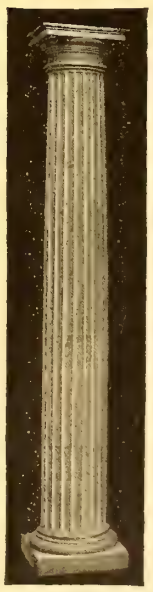
BY WILLIAM ARTHUR

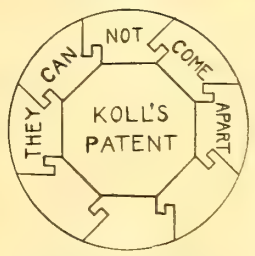
A PRACTICAL guide to estimating the cost of labor and material in building construction from excavation to finish, with various practical examples of work presented in detail, and with labor figured chiefly in hours and quantities. A hand-book for architects, builders, contractors, appraisers, engineers, superintendents and draftsmen. Size, 4¾x6¾ inches, 437 pages, cloth bound. Price, $2.50 postpaid

AN INDISPENSABLE AID TO CONTRACTORS

A circular describing this book will be mailed on application
MUNN & COMPANY, 361 BROADWAY, NEW YORK

Koll's Patent Lock-Joint Columns





The Best for Pergolas, Porches or Interior Use are made exclusively by

Hartmann - Sanders Company

Elston and Webster Avenues
CHICAGO, ILL.

Eastern Office, 1123 Broadway
NEW YORK

Send for Catalogue A-19 of Columns, or A-29 of Sun-dials, Pedestals, etc. (See also "Sweet's Index.")

ATLAS
PORTLAND CEMENT

IMPROVING the grounds is just as important as building the house when you have more land than is comprised in a city lot. For the kind of improvement which not only beautifies but increases the usefulness and the permanent value of your place concrete is the readiest and most successful material.

Concrete is a mixture of cement with broken stone and sand or gravel, and in its plastic form can be molded in any shape desired, after which it hardens into stone.

Many of the smaller and simpler improvements you yourself can build, others can be made with the help of a builder familiar with concrete. The important thing to remember is that concrete made with Atlas Portland Cement is always successful, because Atlas is pure, uniform, thoroughly tested, and made from the real cement materials. It can be bought of reliable dealers everywhere. It will give satisfaction whether the use is a large one or a small one. A few bags of Atlas Portland Cement will do wonders for your country home.

TRADE MARK

None Just as Good

Write for

"Concrete Construction about the Home and on the Farm" (Free)
"Concrete Country Residences" (25 cents)
"Concrete Cottages" (Free)
"Reinforced Concrete in Factory Construction" (10 cents)

IF YOUR DEALER CANNOT SUPPLY YOU WITH "ATLAS," WRITE TO

THE ATLAS PORTLAND CEMENT CO., DEPT. 10, 30 BROAD ST., NEW YORK

LARGEST OUTPUT OF ANY CEMENT COMPANY IN THE WORLD. OVER 40,000 BARRELS PER DAY

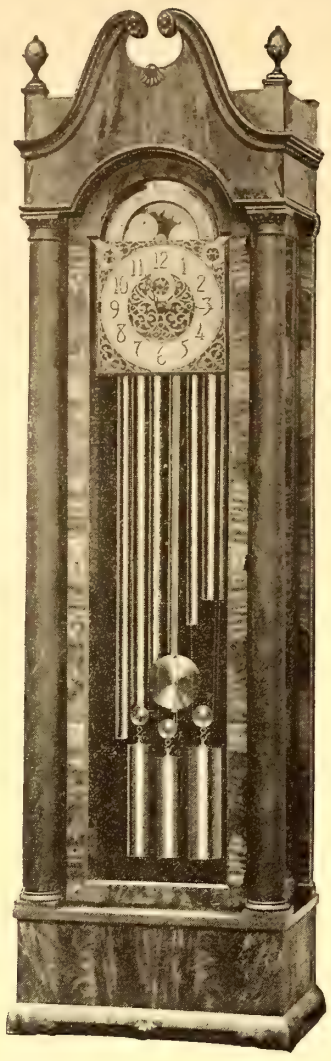
fNA
7100
A512
Hort.

AMERICAN HOMES and GARDENS

OCTOBER, 1909

Vol. VI, No. 10 $3.00 A YEAR Price 25 Cents.

MUNN & CO., INC., Publishers



HALL CLOCKS

Our line comprises the finest and most complete designs of high-class clocks on the market. Our movements are superior in nearly every detail and the purchaser is assured that he can buy the best by ordering a "Waltham."

We will soon have ready for delivery, our new Chiming Movement which chimes either Westminster, Whittington or St. Michaels.

Our "Willard" or Banjo Clock is a model of perfection and appeals to those who desire a first-class article in every respect.

If your local dealer does not sell our line, send direct for illustrated catalogue.

Waltham Clock Company
Waltham, Mass.

Many Uses of a Conservatory

Not only is your conservatory a flower garden, connected with your house and serving you the year round, but it may be a living-room, where the morning sun-bath is enjoyed, or the afternoon tea delightfully served. It adds another unique, attractive room to your home, one from which all the family will get great satisfaction and comfort. Consult us about its construction.

Hitchings & Company

Designing and Sales Offices
1170 BROADWAY, NEW YORK

General Offices and Factory
ELIZABETH, N. J.

JUST PUBLISHED JUST PUBLISHED

CRAFTSMAN HOMES

By GUSTAV STICKLEY

A Book for Architects, Builders, Homemakers and Housekeepers

Containing practical house plans, exteriors and interiors, suggestions for gardens, gates and pergolas, models for furniture, metal work and needlework. The house plans comprise a choice collection of about fifty designs of country, suburban and town houses, bungalows, cottages and cabins, ranging in cost from $500 to $15,000. They have won high recognition as the first fearless expression of an independent national style of building, that meet the needs and characteristics of the American people.

CONTENTS: Craftsman houses and plans, halls and stairways, living-rooms, dining-rooms, porches and terraces, the effective use of cobblestones, gates and gateways, gardens, exterior features and materials, wall space and color schemes, interior woodwork and structural features, choice of woods, floors and how to finish them, treatment of interior woodwork, decoration and finishing, home cabinet-making, and metal work.

SIZES: 8½ x 11 inches. Fine India tint plate paper. Duotone sepia ink. Over 200 half-tone engravings of exteriors and interiors. Four full-page color plates and portrait sketch. Bound in full linen crash. Price, $2.00 net. Postage, $2.24.

MUNN & CO., Inc. 361 Broadway, New York

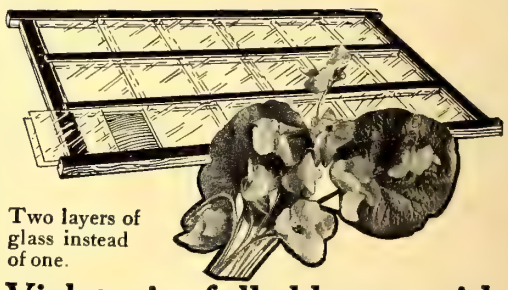
The SCIENTIFIC AMERICAN BOY

By A. RUSSELL BOND

12mo. 320 Pages. 340 Illustrations. Price, $2.00, Postpaid.

A STORY OF OUTDOOR BOY LIFE, suggesting a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. Complete practical instructions are given for building the various articles. The book contains a large number of miscellaneous devices, such as scows, canoes, windmills, water wheels, etc.

MUNN & CO., Inc. Publishers of "SCIENTIFIC AMERICAN" 361 Broadway, New York



Two layers of glass instead of one.

Violets in full bloom with snow banked up around them

The Sunlight Double-Glass Sash will give you bigger, earlier violets than anyone near you. It will force flowers, will give you an abundance of cauliflower, lettuce, radishes, etc. in winter.

The double glass does it

Dry air between two layers of glass is the best non-conductor there is, better than mats or boards. Lets in all the light, retains the heat, excludes cold. Makes your plants grow in zero weather as vigorously as in open air in May.

Never needs covering

Does away with fully three-fourths of your work the covering and uncovering of sash.

More people every year are using their small yards to put in two to five or more sash and grow their own vegetables and flowers and get the better health that goes with it.

Write for our catalog

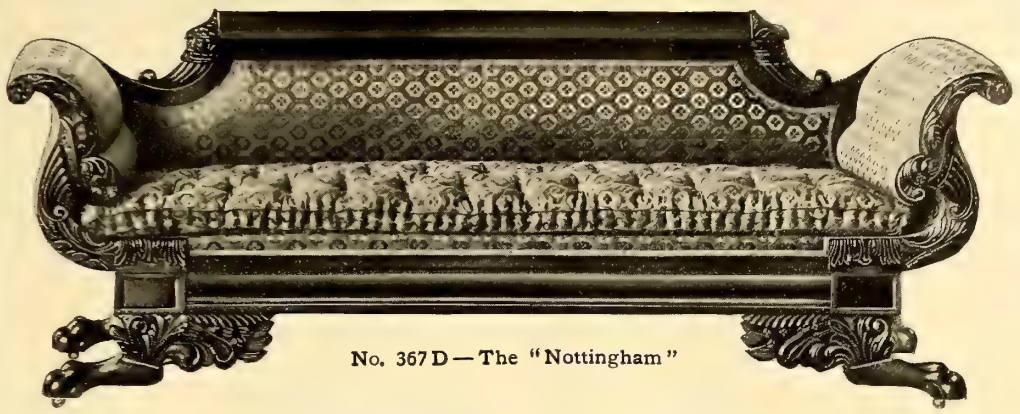
See what hundreds of users say. Get freight prepaid proposition. Order early to insure prompt shipment. Fast freight, safe delivery guaranteed. Write today. Now is the time to prepare for cold frames.

SUNLIGHT DOUBLE GLASS SASH CO.
[Incorporated]
943 E. Broadway, Louisville, Ky.

SUNLIGHT Double Glass Sash TRADE MARK
for Hot-beds and Cold-frames

SMITHSONIAN
AUG 1 2 1985
LIBRARIES

The Wanamaker Galleries



No. 367 D — The "Nottingham"

THE NOTTINGHAM CORNUCOPIA SOFA

(Style : Colonial—Adaptation of Early Empire)

THE more you study the picture, the better you will like the quaint lines of this jolly, old-fashioned sofa. Note how the broad lower and top rails add to its squat, curious shape. And the cheerful and varied repetition of the "cornucopia" theme, and the cohesion in its design, are uncommonly pleasing. As a union of the useful and beautiful, this bonny Sofa is unique. The loose cushion is the last old-time finishing touch that makes this piece comparable to an old picture. As the photograph shows, this Sofa is richly sculpture-carved out of solid Honduras mahogany; but it does *not* show the infinite care with which it has been constructed, or the antique "egg-shell" finish.

Yet, when you consider these specifications, luxurious upholstery, its dimensions, the price is MODERATE.

Length, 91 inches; Height, 34½ inches; price, in pi n denim, $128.50 F.O.B., New York. Requires 6⅓ yrds of 50-inch mterial for covering.

This picture is one of several hundred photographic reproductions from our Catalogue-Folio, "FOREFATHERS' FURNITURE."

Our immense Three-Gallery collection of Furniture is represented in numerous other folios, which, with our system of sending samples of coverings and many other sorts of merchandise and our general Mail Order Service, are described and prettily illustrated in Wanamaker's "GUIDE BOOK," bound in boards. Mailed free on request.

Those who have a room—or house—to decorate and furnish, and who will send us a rough sketch, or blue-print, will receive samples, color-schemes, pictures of Furniture, suggestions and estimates, if they will address our "DECORATIVE ADVISORY BUREAU, Section B." NO CHARGE FOR THIS SERVICE. Send communications to the New York Store.

JOHN WANAMAKER

PHILADELPHIA NEW YORK PARIS

THE exquisite beauty of line and form shown in the lighting instruments of our forefathers has led to the use of many a beautiful old lamp, even in our modern homes.

The ENOS COMPANY Makers of Lighting Fixtures

NEW YORK

Office and Factory: 7th Av. and 16th St. Salesrooms: 36 West 37th St.

Boston: H. F. Esterbrook, Inc., 9 Park Street

Chicago: W K. Cowan & Co., 203 Michigan Blvd.

Baltimore: 519 North Charles St.

San Francisco: 1748 California St.

Pittsburg: G. P. Norton, Century Building

Toronto: 94 King St. West

St. Louis: N. O. Nelson Mfg. Co.

Spokane: Cutter & Plummer, Inc.

Portland, Ore.: J. C. English Co., 128 Park St.

Seattle: Cox & Gleason, 1914 Second Ave.

ALASKA-YUKON-PACIFIC EXPOSITION

Dexter Brothers Co.,
Boston, Mass.
Gentlemen:

We take pleasure in informing you that your number 794 Austrian Gray Shingle Stain was specified and used on the exterior and interior of the Forestry Building, Alaska-Yukon-Pacific Exposition, Seattle.

The Stain has proven to be very satisfactory, having given the woodwork a natural gray, not obtained by the use of ordinary colors or stains.

Yours very truly,
Signed SAUNDERS & LAWTON,
Architects.

DEXTER BROTHERS CO.

103-105-107 Broad Street, BOSTON

AGENTS: H. M. Hooker Co., 651 Washington Blvd., Chicago; W. S. Hueston, 6 E. 30th St., New York; John D. S. Potts, 218 Race St., Philadelphia; F. H. McDonald, 619 The Gilbert, Grand Rapids, Mich.; F. T. Crowe & Co., Seattle, Spokane, Tacoma Wash., and Portland, Ore.; M. D. Francis, Atlanta, Ga.; F. S. Coombs, Halifax, N. S.

Sample and Circular Free

A House Lined with

Mineral Wool

as shown in these sections, is *Warm in Winter, Cool in Summer,* and is thoroughly DEAFENED.

The lining is vermin proof; neither rats, mice, nor insects can make their way through or live in it. MINERAL WOOL checks the spread of fire and keeps out dampness.

CORRESPONDENCE SOLICITED

U. S. Mineral Wool Co.

140 Cedar St., NEW YORK CITY

Antiques

Photographs and descriptions of genuine antique pieces sent on request. List your wants of antiques with me.

RALPH WARREN BURNHAM

IPSWICH IN MASSACHUSETTS

Heat and Hot Water Anywhere Anytime

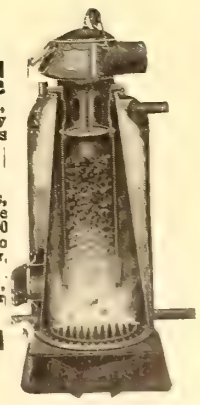
at greatest saving of time, labor and fuel, with a Wilks Self-Feeding Heater, only heater with a coal magazine that regulates itself, keeping an even fire for 10 hours.

Wilks Self-Feeding Heaters

for farm buildings, green-houses, brooders, poultry houses, bowling alleys, etc., have been on the market successfully for over 50 years. Made of best steel, no sections to crack, no bolts to loosen, no leaks to fear. Tested to 100 pounds pressure.

Write for FREE BOOK showing sizes, prices, etc. We will tell you the best heater for your purpose if you give full particulars; satisfaction guaranteed.

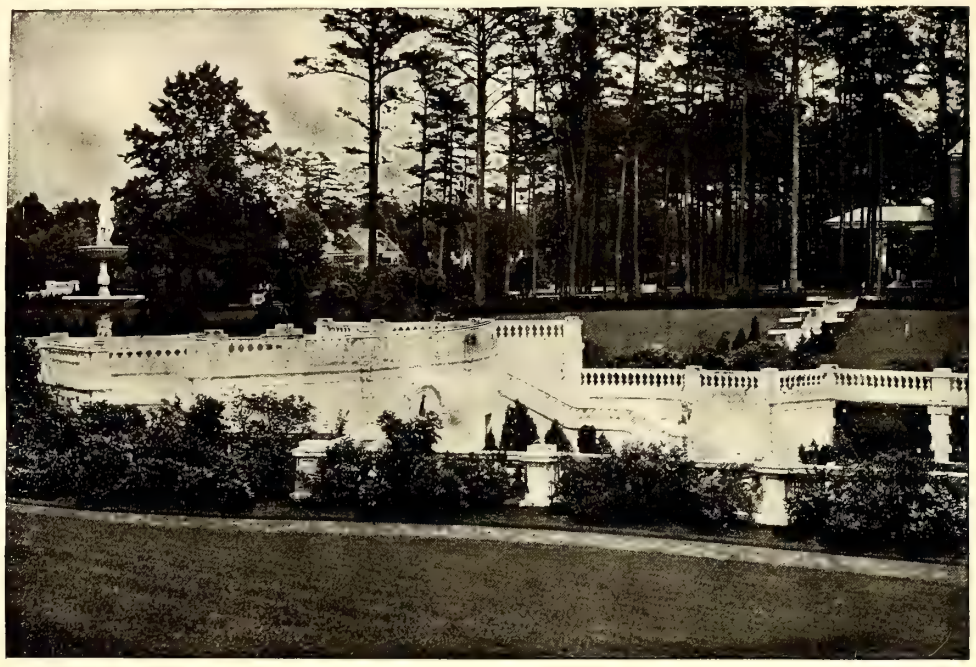
S. WILKS MFG. CO 3564 Shields Av. CHICAGO.



American Estates and Gardens

By BARR FERREE

Editor of "American Homes and Gardens," Corresponding Member
of the American Institute of Architects and of the
Royal Institute of British Architects



4to. 11x13½ inches. Illuminated Cover and 275 Illustrations. 306 Pages.

Price, $10.00

A sumptuous book, dealing with some of the most stately houses and charming gardens in America. The illustrations are in nearly all cases made from original photographs, and are beautifully printed on double coated paper. Attractively bound. The book will prove one of the most interesting books of the year and will fill the wants of those who desire to purchase a luxurious book on our American Homes.

Munn & Company
INC.,
Publishers of "Scientific American"
361 BROADWAY, NEW YORK

THE NEW AGRICULTURE

By
T. BYARD COLLINS

8vo. Cloth. 376 Pages
100 Illustrations
Price, $2 00, Postpaid

THIS new and valuable work sets forth the changes which have taken place in American agricultural methods which are transforming farm life, formerly so hard, into the most independent, peaceful and agreeable existence. Farm life to-day offers more inducements than at any previous period in the world's history, and it is calling millions from the desk. The present work is one of the most practical treatises on the subject ever issued. It contains 376 pages and 100 illustrations.

In brief, the Contents are as follows:

CHAPTER I. This chapter contains a general statement of the advantages of farm life.

CHAPTER II. Deals with the vast systems of irrigation which are transforming the Great West, and also hints at an application of water by artificial means in sections of the country where irrigation has not hitherto been found necessary.

CHAPTER III. Gives the principles and importance of fertilization and the possibility of inoculating the soil by means of nitrogen-gathering bacteria.

CHAPTER IV. Deals with the popular awaking to the importance of canals and good roads, and their relation to economy and social well-being.

CHAPTER V. Tells of some new interests which promise a profit.

CHAPTER VI. Gives a description of some new human creations in the plant world.

CHAPTER VII. Deals with new varieties of grain, root and fruit, and the principles upon which these modifications are effected and the possibilities which they indicate.

CHAPTER VIII. Describes improper methods in agricultural practice.

CHAPTER IX. Devoted to new machinery by which the drudgery of life on the farm is being eliminated, making the farm a factory and the farmer the manager of it.

CHAPTER X. Shows the relation of a body of specialists to the American farmer, who can have the most expert advice upon every phase of his work without any expense whatever to himself.

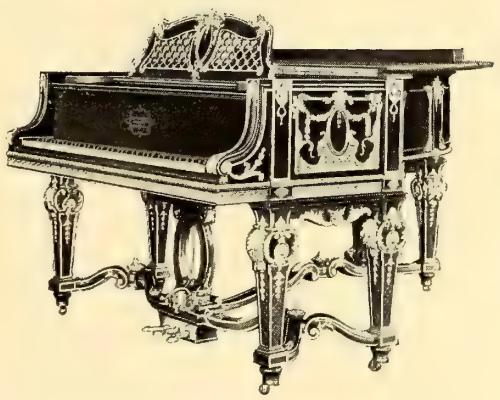
MUNN & CO., INC., Publishers 361 Broadway, NEW YORK

IN the designing and manufacture of Period and Art cases to harmonize with any plan of architecture or decoration, Steinway & Sons are the recognized leaders, as in all other departments of piano making—a distinction they have enjoyed for three generations. Every

STEINWAY
ART PIANO

is a true representation of its respective period—a veritable gem of beauty and perfection. A visit to the Steinway Studios will reveal that, in these masterpieces of pianocraft, music and decorative art are so deftly blended that they at once command the admiration and praise of architect, artist and connoisseur.

STEINWAY & SONS
Steinway Hall
107-109 East 14th Street, New York
(Subway Express Station at the Door)

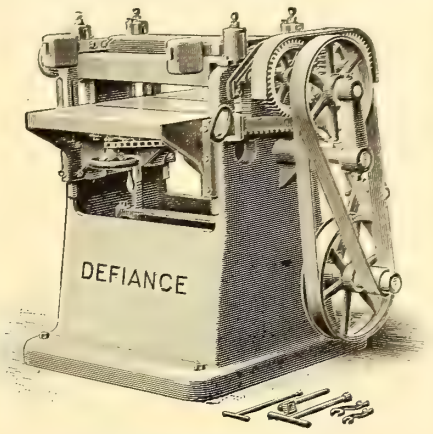


Steinway Parlor Grand Piano in the period of Louis XIV, gilt and enameled

"DEFIANCE"
Wood-Working Machinery

For Pattern Shops and General Wood Work

Invented & Built by
THE DEFIANCE MACHINE WORKS
DEFIANCE, OHIO



24-Inch Single Surface Planer

From Our No. 3 Book

GOING TO BUILD?
SAVE MONEY ON PLANS

We are selling plans that are **practical** and at a price consistent with high-class work.

GET OUR BOOKS

No. 1. 25 Residences, cost $1,500 to $5,000 .....$ .50
No. 2. 25 Residences, cost $5,000 to $20,000..... 1.00
No. 3. 25 Concrete Residences..... 1.00

Photographic cuts of 2-Flats, Churches, Schools, Business Blocks, etc., ten for $1.00. **Order now!**

Arthur G. Lindley Co., Architects
SCHENECTADY, N. Y.
We Enter Large Competitions

The Most Perfect and Durable Covering
For Walls, Ceilings, Wainscots

For the Bathroom, Hall and Vestibule of Residences and Public Buildings is

Will not crack, break or loosen

Enametile
THE NEW TILE

Can be applied over any form of ceiling

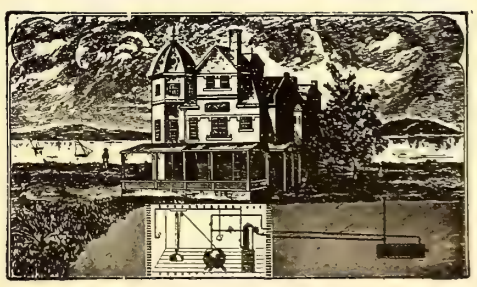
Enametile is flexible metal, enameled and embossed, to reproduce perfectly in color and design, the **finest ceramic tiling,** at a cost of **only** one-sixth to one-half as much. Enametile is hygienic, dust-proof, vermin-proof.

EASILY AND QUICKLY INSTALLED

Send for Handsome Art Portfolio showing many of the designs of **Enametile,** in original colors. Plans, estimates, supplied you direct, your contractor or your architect.

NEW YORK METAL CEILING CO.
544 W. 24th Street, New York City

Manufacturers of **Metal Ceilings** for **Business** and **Public** Buildings. Catalogue and full information for the asking.



THE most modern, and best illuminating and cooking service for isolated homes and institutions, is furnished by the **CLIMAX GAS MACHINE.**

Apparatus furnished on **TRIAL** under a **guarantee to be satisfactory** and in advance of all other methods.

Cooks, heats water for bath and culinary purposes, heats individual rooms between seasons—drives pumping or power engine in most efficient and economical manner—also makes brilliant illumination. **IF MACHINE DOES NOT MEET YOUR EXPECTATIONS, FIRE IT BACK.**

Send for Catalogue and Proposition.

Low Price Better than City Gas or Electricity and at Less Cost.
Liberal Terms

C. M. KEMP MFG. CO.
405 to 413 E. Oliver Street, Baltimore, Md.

HOW ARE THE BEAMS HELD WHERE THEY ABUT THEIR SUPPORTS?

Are they Cut Away by Framing?

Do You Depend Merely on Spiking?

The Best Way is to Use Our Joist Hangers.

LANE BROS. CO. (The Door Hanger Manufacturers) 434-466 PROSPECT ST. POUGHKEEPSIE, N. Y.

Refinish a Piece of Your Furniture at Our Expense

Let Us Send the Materials FREE

Let us show you how to make old furniture look like new, how to rejuvenate shabby floors, how to refinish the woodwork in any shade to suit your individual taste. You can do it so easily that we want you to make the test at *our expense* to prove it.

These Materials Are Yours—FREE—for the Asking

May we mail a package to *you?*

No doubt you have some piece of furniture that you prize highly, yet you do not use on account of its worn condition, or because it does not harmonize with other furniture or decorations.

—Use Johnson's Electric Solvo to quickly remove the old finish.

—Use Johnson's Wood Dye to color the wood any one of 14 shades—choose from list below.

—Use Johnson's Prepared Wax to impart that beautiful "hand-rubbed" effect.

The book will tell you how in every case, and will show you how to carry out other decorating ideas you may have in mind.

From this test and this book, you will learn how many opportunities you have of beautifying the home by using—

Johnson's Wood Dye

Made in 14 Standard Shades:

No. 126 Light Oak	*No. 130 Weathered Oak*
No. 123 Dark Oak	*No. 131 Brown Weathered Oak*
No. 125 Mission Oak	*No. 132 Green Weathered Oak*
No. 140 Manilla Oak	*No. 121 Moss Green*
No. 110 Bog Oak	*No. 122 Forest Green*
No. 128 Light Mahogany	*No. 172 Flemish Oak*
No. 129 Dark Mahogany	*No. 178 Brown Flemish Oak*

Please send me sample of Johnson's Wood Dye, Shade No..... Electric Solvo and Prepared Wax. Also Free Book. Edition AH-10.

Name.....

Address.....

.....

Please Use This FREE COUPON

Johnson's Wood Dye is not a mere stain—not simply a surface dressing. It is a penetrating dye, sinking deep in the wood fiber, fixing a rich color.

Johnson's Prepared Wax adds a top dressing of subdued luster. It does not catch or hold dust. It does not show scratches or heel marks.

The trial packages will demonstrate these facts to you.

Use the coupon. Cut it out now, while you think of it, and mail at once.

Good dealers distribute these Johnson samples, too. Ask yours for a package.

S. C. Johnson & Son
Racine, Wisconsin
"Wood Finishing Authorities"

A FLORIDA FRUIT FARM

By E. P. Powell

CENTRAL FLORIDA is a strip of land running up through the middle of the State; not more than forty miles wide, probably one hundred miles long. It takes in no large cities, and the vegetation is not as unique as that along the coast. In fact, you will find a good portion of the forest is pine and oak, so that a Northerner feels quite at home. The soil is sandy but capable of being made very rich. The pine trees in places stand eighty to one hundred feet high, and form most beautiful parks. This is especially true around the small lakes, which abound through nearly the whole strip. Lake County is well named, because you can not go five miles without seeing twice that number of lakes, besides a lot of lakelets or ponds. It is here that Northerners should find their home if possible. The land rolls so that you may call it hilly, and in some places it is quite steep. The hollows hold the lakes, which are without outlet, and fill up according to the continuance of rain during the summer season. Generally there are showers enough during the winter, but for the last two years there has been almost continuous lack of rain.

Truck gardening is carried on mainly in the level, flat and moist coast counties, but in this middle and hilly region is the place for a good fruit garden, and for those vegetables which make home life comfortable. You can grow the Northern potato as well as the sweet potato, only it will not keep long after ripening. Carrots and beets and cabbages, with parsley and spinach, we put in in October or November and use in January. The fruit garden is unique in this, that you can have side by side apples, pears, plums, cherries, and the semi-tropical loquats and oranges. We do not undertake to grow pineapples, mangos and similar fruits. A man who has ten acres in this region does not do well to put it all to oranges and grapefruit, although he is tempted to do so. There is something bewitching about this orange growing. I suppose it is the beauty of the orchard and the fruit. There is nothing more beautiful in the world than an orange orchard, with the one exception of an apple orchard. It is a marvel in blossom, sending its fragrance all over the neighborhood, and winning millions of bees; who are said to get absolutely intoxicated, and to make less honey than they do from weeds. In full bearing the limbs bend down to the ground with their golden balls—and I must confess that it is an enchanted garden, and there is no wonder that it bewitches a visitor to have something like it. This whole section is filling up with Northerners, and not a few of them buy up groves at sight. There is lots of money in it, provided we do not have another freeze like that of 1895. We shall surely have light frosts every winter, but these do little harm.

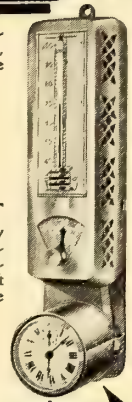
In January and February we have our loquats as well as oranges, and although this crop is not quite sure, it is rare that we miss a plenty for home use. It is too delicate for shipment. The loquat tree is evergreen, but the leaves look very much like rather rough cherry leaves. The fruit is one and a half inches in diameter and hangs in large clusters. The earlier clusters rarely form fruit, but in January we begin to get perfected clusters. These are still forming until May. The shape of the fruit is like a pear, but the flavor is much more like that of a cherry. I have procured a variety from California which is much larger and which bears when the tree is but three or four feet high. There is a good chance of improving all these tropical fruits by cross-breeding and by selection. New and choice oranges are every year coming before the pub-

lic, so are loquats and mangoes, and pine-apples. We shall get something very fine in all these lines, and something that will send out of cultivation all that we have at present. In March begins the mulberry, a fruit that we never think of eating in the North, but here we have sorts that are of special importance for eating out of hand and for cooking. They are about as large as your initial finger, and are borne in immense quantities, on handsome trees of about twenty feet in height. The varieties that do our fine work here are too tender for Northern climates, but we surely would not like to be robbed of our mulberries. Mocking-birds and cardinal birds fill the branches, and hens delight in the fallen ones. Before the robins go North I assure you they have filled themselves well with many a dinner of Hick's and Stubb's mulberries. There are white varieties, but I have not yet found one of great importance. The razorback will venture to tear his way through barbed wire to get at this fruit, but the razorback's days are about numbered. There are too many Northerners here with shotguns and rifles.

April winds up most of our orange picking, which began about the first of November. There are still half a dozen sorts that will hang on all summer, but they are not largely planted, partly because the growers like to get through with the job and go North for the summer, and partly because the market does not call for a very protracted supply. Peach trees are in blossom all winter, and there will be straggling peaches ripening in the latter part of February or March. The crop really begins, however, to be ready for market the last of April, and runs through May and June. We have new varieties which will probably protract the season. These same months give us plums and cherries. I have heard it said by old fruit-growers that we can do nothing here with cherries or apples. I am surely growing very successfully several varieties of apples and some varieties of cherries. That they will be profitable fruiters I am not so sure. King David is the best grower among my apple experiments, although Red Astrachan and some others are doing finely. Plums grow with astonishing rapidity and bear heavy crops. The curculio is here, and one must know how to fight it; unfortunately, the Southerner does not understand it. I am trying quinces with every possible encouragement, and we know that many of our best grapes will do almost as well here as in New York State. The Niagara is very popular, so also is Moore's Early and Diamond. Of course, these Northern grapes ripen earlier here and become dead ripe and sweet. Sour grapes, like Ives, are really of fine quality in this section. I have planted several hundred of the crossbred varieties originated by Mr. Munson, of Denison, Tex., such as Headlight, Banner, and Wapanuka. Mr. Munson's work is fully equal to that of Mr. Burbank, and he is the national authority on our native wild grapes.

You can readily see from these notes that a Northerner can build a home here in Florida, and not only thoroughly enjoy himself, but take good care of his physical needs. The chief trouble he will have to compete with is the fact that an annual burning over of the State has destroyed the humus that nature has tried to provide, and has done it for so many years that the soil needs addition and renovation about equally. However, there is no spot in the United States where material is provided more lavishly for making soil than in Florida. The legumes are more abundant than purslane and pigweed in the North. Cow peas grow twenty feet in a season, and velvet bean sixty or seventy feet. Beggar-weed is another delicious fodder, as sweet as sugar beet. These legumes can be mowed two or three times,

A Wonderful Fuel Saver



Easily applied to all heating plants. Automatically keeps your home at an even, healthful temperature no matter how the weather changes. Every

HOWARD THERMOSTAT

that is installed demonstrates that it is a most wonderful fuel saver.

WITH CLOCK ATTACHMENT

it still further reduces the coal bills by permitting a lower temperature throughout the house at night, and at a predetermined hour automatically adjusting draft and check, so that by rising time the temperature of the house is at the degree desired for the day.

Guaranteed for 10 years. Thousands in use more than 25 years. Coal saved pays for it. Therefore it costs you nothing. Sold by Heating Men and Electricians Everywhere.

Send us the name and address of your furnace man, steam fitter or electrician and we will send you our booklet No. 18, which gives complete details. Write today

HOWARD THERMOSTAT CO.
354 W. 1st St., Oswego, N. Y.

New England Office, 188 Franklin St., Boston, Mass.
New York City Office, 143 Liberty Street
Telephone 7607 Cortlandt
Canadian Representative, The Gurney Foundry Co., Ltd., Toronto, Canada.

OPEN — CLOSED

A PRIVATE
WATER WORKS
FOR YOUR HOME

¶ No matter where you live, or how situated, you may have every convenience of a city water supply, by the use of a

Leader

Pneumatic Water Supply System

¶ Water under pressure for kitchen, laundry, bathroom, sprinkling lawn and garden, watering stock and for fire protection.

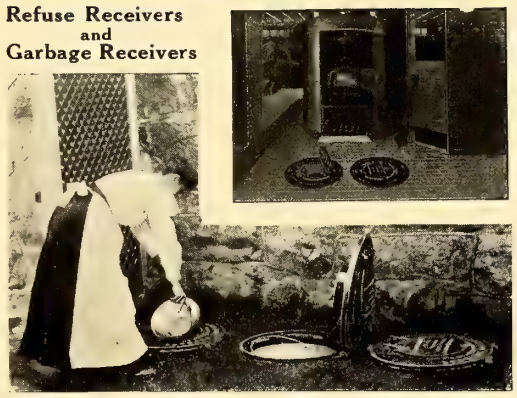
¶ An air tight steel tank in the basement stores the water as it is pumped by hand or power and forces it through the pipes and faucets by air compressed in the upper portion of the tank.

¶ No elevated or attic tanks to freeze and become stagnant. Water kept clean and pure.

¶ Send 2 cent stamp for booklet, "How I Solved the Water Supply Problem," which tells "WHY," or 6 cents for "Handbook of Hydro-Pneumatics," which tells "HOW." Catalog on request. Sold by dealers everywhere.

Leader Iron Works
1801 Jasper St., DECATUR, ILL.
Room 518, 15 William St., NEW YORK CITY

Refuse Receivers and Garbage Receivers



Don't Be Knocked Over
By Stenches from Backyard Débris

Why not look up the Stephenson Method? Seven years on the market, and if satisfied protect the health of your family by installing

THE STEPHENSON Underground Garbage Receiver

which removes all objections to the old swill tub

THE STEPHENSON TRADE MARK

Underfloor Refuse Receiver for ashes
Underground Earth Closets for Camps
Portable Metal Houses for Above
Spiral Ribbed Ash Barrel, outwears two
High-class Sanitary Bathroom Accessories

SOLD DIRECT. Send for Circular on each

C. H. STEPHENSON, Mfg., 21 Farrar Street
Lynn, Massachusetts

WE MAKE THE PERMANENT KIND OF

RUSTIC WORK

that is thoroughly distinctive and which gives that artistic finish to the country place.

Rustic Tea Houses, Boat and Bath Houses, Arbors, Pergolas, Back Stops for Tennis Courts; Rustic Bridges for Ravines, Entrance Gates, Chairs, Tables, Flower Stands, etc., in fact, Rustic Work of every description.

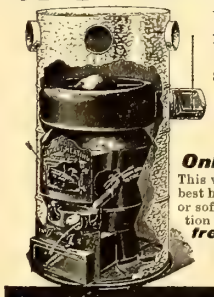
Catalog and Sketches Sent upon Application

RUSTIC CONSTRUCTION WORKS, 33 Fulton Street, New York City

This Tea House on exhibition in our warerooms ready for immediate shipment

We Want To Tell You How

We Put Every Cent of the Dealers Profits into Your Pocket



You can **save** not only the dealer's profits but his excessive charges for installation and repairs by dealing direct with the manufacturers. You can keep in your own pocket at least one-third the retail price of a heating plant. Let us tell you all about the

Jahant Down Draft Furnace

Only $10 down and $10 per month, with freight prepaid east of the Mississippi River. This wonderful furnace has proven its superiority above all others during the last ***30 years.*** It is without doubt the very best heating system for your home. It ***saves*** from ⅓ to ½ in fuel bills, because the patented "down-draft" burns hard or soft coal—wood or lignite—without cinders or clinkers, giving full heating value of every particle of fuel. Needs less attention than any furnace you ever saw. A strong "Guaranty Bond" goes with every Jahant, which allows you ***a 360 days free use of the furnace.*** You run no risk, as we supply special plans, full directions and give ***free all necessary tools,*** so that any man who can drive a nail can successfully install a Jahant.

No matter what make or system of heating you are considering, let us tell you more about the many conveniences and good points of our furnace; it's economy, it's healthfulness and how you can save money.

Write today for our book.

The Jahant Heating Co., 50 Howard St., Akron, Ohio.

Cottage Designs

By far the most complete collection of plans ever brought out. Illustrated with full-page plates. One dollar each. Sold separately.

MUNN & CO., INC., 361 BROADWAY, NEW YORK

No. 1. COTTAGE DESIGNS
Twenty-five designs, ranging in cost from $600 to $1,500.

No. 2. LOW-COST HOUSES
Upward of twenty-five designs, costing from $1,000 to $3,000.

No. 3. MODERN DWELLINGS
Twenty designs, at costs ranging from $2,800 to $7,000.

No. 4. SUBURBAN HOMES
Twenty selected designs, costing from about $3,000 upward.

For The Craftsman Style

of architecture and interior finish, the designs and construction of **Morgan Doors** are in perfect keeping. They are finished in the white and may be stained any desired color.

Cross section showing construction of 1⅜ inch door.

The name "*Morgan*" is branded on each door.

are perfect doors. Built of several layers with the grain running crosswise, making shrinking, warping or swelling impossible. Veneered in all varieties of hardwood—birch, plain or quarter-sawed red or white oak, brown ash, mahogany, etc.

Morgan Doors are light, remarkably strong and absolutely perfect in every detail of construction. Each **Morgan Door** is stamped "*Morgan*" which guarantees quality, style, durability and satisfaction. *Waterproof glue used.*

In our new book, "The Door Beautiful," **Morgan Doors** are shown in their natural color and in all styles of architecture—Colonial, Empire, Mission, etc., and it is explained why they are the best and cheapest doors for permanent satisfaction in any building. ***A copy will be sent on request.***

Architects: Descriptive details of Morgan Doors may be found in Sweet's index, pages 678 and 679.

Morgan Company, Dept. A, Oshkosh, Wisconsin.

Morgan Sash and Door Company, Chicago, Ill.

Morgan Company, Oshkosh, Wisconsin. Morgan Company, Baltimore, Maryland.

CEMENT

Its Chemistry, Manufacture & Use

Scientific American Supplement 1372 contains an article by A. D. Elbers on tests and constitution of Portland cement.

Scientific American Supplement 1396 discusses the testing of cement.

Scientific American Supplement 1325 contains an article by Prof William K. Hatt giving an historical sketch of slag cement.

Scientific American Supplements 955 and 1042 give good accounts of cement testing and composition, by the well-known authority, Spencer B. Newberry.

Scientific American Supplements 1510 and 1511 present a discussion by Clifford Richardson on the constitution of Portland cement from a physico-chemical standpoint.

Scientific American Supplement 1491 gives some fallacies of tests ordinarily applied to Portland cement.

Scientific American Supplements 1465 and 1466 publish an exhaustive illustrated account of the Edison Portland cement works, describing the machinery used.

Scientific American Supplement 1519 contains an essay by R. C. Carpenter on experiments with materials which retard the activity of Portland cement.

Scientific American Supplement 1561 presents an excellent review by Brysson Cunningham of mortars and cements.

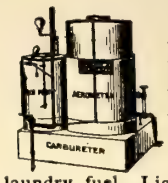
Scientific American Supplement 1533 contains a resumé of the cement industry and gives some valuable formulae.

Scientific American Supplement 1575 discusses the manufacture of hydraulic cement. L. L. Stone is the author.

Scientific American Supplements 1587 and 1588 contain an able paper by Edwin C. Eckel on cement material and industry of the U. S.

Any one of these Supplements will be sent for 10 cents. The entire set costs $1.60, and constitutes an invaluable text book on the subject. Order from your Newsdealer or from

MUNN & COMPANY, Inc., 361 Broadway, New York



Country Homes

may enjoy city comforts and conveniences *at less cost* than Kerosene, Acetylene or Electricity, with none of their dangers, by using the ***Automatic***

Economy Gas Machine

Produces light, kitchen and laundry fuel. Lighted the same as electric, but without batteries. Write for booklet, "***The Economy Way.***"

ECONOMY GAS MACHINE CO., Sole Mfrs.,
437 Main Street Rochester, N. Y.

FINE HARDWOOD FLOORS

Most economical, healthful and satisfactory—for old or new houses, different patterns to match furnishings. Outwear carpets. Stocks carried in the leading cities.

PLAIN OR ORNAMENTAL. THICK OR THIN.

Write for PATTERN CATALOGUE

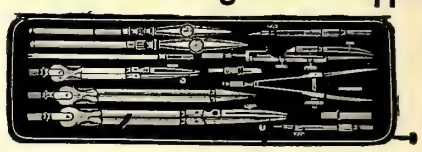
THE INTERIOR HARDWOOD CO. MFTRS. INDIANAPOLIS

St. Louis, Mo. Baltimore, Md

F. Weber & Co.

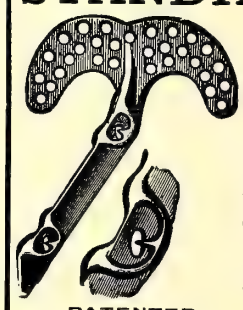
1125 Chestnut St., Philadelphia, Pa.

Architects' and Engineers' Supplies



"FABRIANO" Hand-Made Drawing Papers
Superior to any other hand-made paper
F. Weber & Co.'s Illustration Boards, Air Brushes and Materials

STANDING SEAM ROOF IRONS



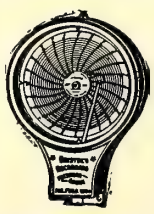
PATENTED

CLINCH right through the standing seam of metal roofs. No rails are needed unless desired. We make a similar one for slate roofs.

Send for Circular

Berger Bros. Co.

PHILADELPHIA



BRISTOL'S RECORDING THERMOMETERS

make continuous records of atmospheric temperatures, and are designed for both indoor and outdoor temperatures. Send for new catalogues.

THE BRISTOL COMPANY, WATERBURY, CONN.
NEW YORK *Branches* CHICAGO

City smoke and dust are hard on most vines—many kinds which thrive in the country fail when planted in the city. Because of its strong, vigorous growth, its unusual climbing propensities, and its remarkable hardiness, the beautiful *Euonymus radicans* proves a most satisfactory

High-Climbing Evergreen Vine for City Homes

Its leaves are small and glossy, and grow thickly; it bears numerous showy fruits in striking contrast to its foliage. Many authorities consider *Euonymus radicans* a better evergreen vine than the English Ivy. Also useful for low hedge, if properly trimmed.

We have a fine stock of three-year-old plants, and can furnish fine specimens at 20 cents each, or $2.00 per dozen; extra-strong plants, 25 cents each, or $2.50 per dozen,

Our new Fall Price-List describes many other interesting specialties. It's free—write.

PETER'S NURSERY COMPANY, Box 230, KNOXVILLE, TENN.

GINSENG

The most valuable crop in the world. Easily grown throughout the U. S. and Canada. Room in your garden to grow thousands of dollars' worth. Roots and Seeds for sale. Send 4c. for postage and get our booklet A-V, telling all about it. McDOWELL GINSENG GARDEN, Joplin, Mo.

For $5

American Homes & Gardens and *Scientific American* sent to one address for one year.

REGULARLY $6

like alfalfa in the North, and then plowed under to add nitrogen and humus to the soil. We hope that the fool work of wasting by fire what nature tries to give us is not likely to continue much longer. It is of no use to anybody but the cattle-rangers, and really is not as good for them as a good stout stock law would be. In the orchard we are accustomed to using beggar-weed and cow peas for a summer cover crop. Anyone who can succeed in fruit growing in the North ought to succeed in this soil and climate, but a lazy lout will starve here as easily as in Massachusetts.

THE SAND-BOX

By Ida D. Bennett

ANYTHING which makes for ease and convenience in gardening should be welcome to the gardener, and in the sand-box one finds a convenience which solves many vexed questions of management of those plants which are not in evidence during the summer, and yet must have attention to fit them for their place in the window-garden and conservatory during winter.

It is intended primarily for the housing—if one may use that term for an out-of-door construction—of young plants which are too tender or unsuited for planting out in the open ground, or of a size to be brought into the house for winter blooming, and also for those house plants which it is not desired to have bloom during summer, but to get into the best possible condition for winter blooming.

It consists of a shallow box of any desired dimensions, preferably long and narrow, or at least not too wide to reach across comfortably when sitting in a chair beside it. It should not be more than five or six inches deep. It should be mounted on some kind of a support of a substantial character, as, when filled with plants and sand, the weight is considerable, and of a height that will be convenient when sitting on a chair or stool. It should be filled with clean, white sand—that from the lake is best—kept constantly moist. Into this moist sand the pots are plunged to their rims, the tall ones in the rear and the smaller ones in front. It may be made attractive by trailing vines over the sides and ends to hide the supports.

The best position for the sand-box is on the east side of the house where it will get the morning sun, but be screened from the hot sun from the south and west.

The wet sand keeps the roots of the plants cool and moist at all times and in the best possible condition for growth, while the moisture evaporating from the sand creates an atmosphere similar to that in a greenhouse with the added advantage of fresh air and sunshine.

In this favorable situation tender seedlings such as cinnerarias, gloxinias, begonias, carnations and the like will make a rapid, healthy growth and no better place can be found for the rootings of cuttings. I have never found a cutting that would not root here, roses especially find in the sand-box a congenial place to root and grow, and it is only necessary to thrust the cuttings—the stems from cut flowers may be utilized for this purpose—into the sand between the pots to insure growth.

Gloxinia and begonia leaves laid on the sand and the stems thrust under the edge of a pot will quickly root, the gloxinia forming first a callous and then a bulb and root. As nearly all plants will grow freely in clean sand, if one forms the habit of sticking any cuttings that come to hand during the summer in the sand-box they will find themselves with an excellent collection of well-rooted plants by fall, only one must never allow the sand to become dry.

In other days when the good people went to the grocery for soda crackers they got just common crackers in common paper bags.

NOW

Uneeda Biscuit

come to you in that wondrous package that enables you to enjoy such soda crackers as those old folks never knew.

NATIONAL BISCUIT COMPANY

Farr's Hardy Plant Specialties For October and Early Fall Planting

PEONIES—My collection has a world-wide reputation. I have ready this fall more than 100 000 strong roots, in some 420 kinds, which will be sure to bloom next year.

IRISES—My surpassing collection has no equal in America. It embraces every good one of the innumerable varieties in the 170-odd known species. I have hundreds of kinds, all of proved merit.

PHLOXES—A superb assortment, embracing all the latest novelties. A specially fine stock of healthy young plants sure to bloom next season. Special prices on application.

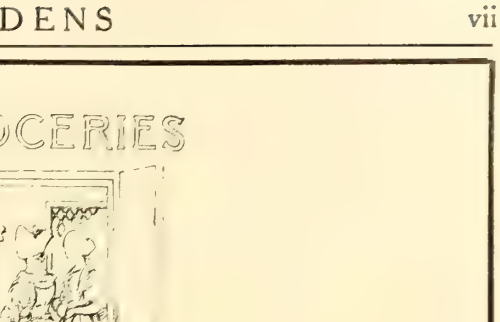
DELPHINIUMS—The finest lot of hybrid kinds I have ever grown or seen—many of them the superior of all the named varieties.

SPECIAL OCTOBER OFFER, WHILE THEY LAST,

of Farr's Hybrid Delphiniums $2.50 per doz. $18.00 per 100. Stock limited.

Shall I send you my catalogue? It is free to all who are interested in hardy plants. And you will find it worth while.

BERTRAND H. FARR, **809 E Penn St.'**
Wyomissing Nurseries, **Reading, Pa.**



The Candy of Character

On the Character of Candy depends its fitness for gift making.

No Candy is so well fitted and graciously accepted as

Huyler's

"Candies of Rare Quality."

ANTIQUES

I have a very large stock of Old China, Old Mahogany Furniture, Brasses, Coppers, Pewter, Antique Jewelry, etc. My twenty-page Catalogue quotes descriptions and prices of all. Sent to any one interested in Antiques.

ADA M. ROBERTS
Box 63, WASHINGTON NEW HAMPSHIRE

N. LE BRUN & SONS,
ARCHITECTS,
NEW YORK CITY

THE use of that one word "Atlas" can make or mar the success of your concrete house. Everyone knows the attractiveness and value of concrete as a building material, but not everyone knows the importance of getting the right brand of cement.

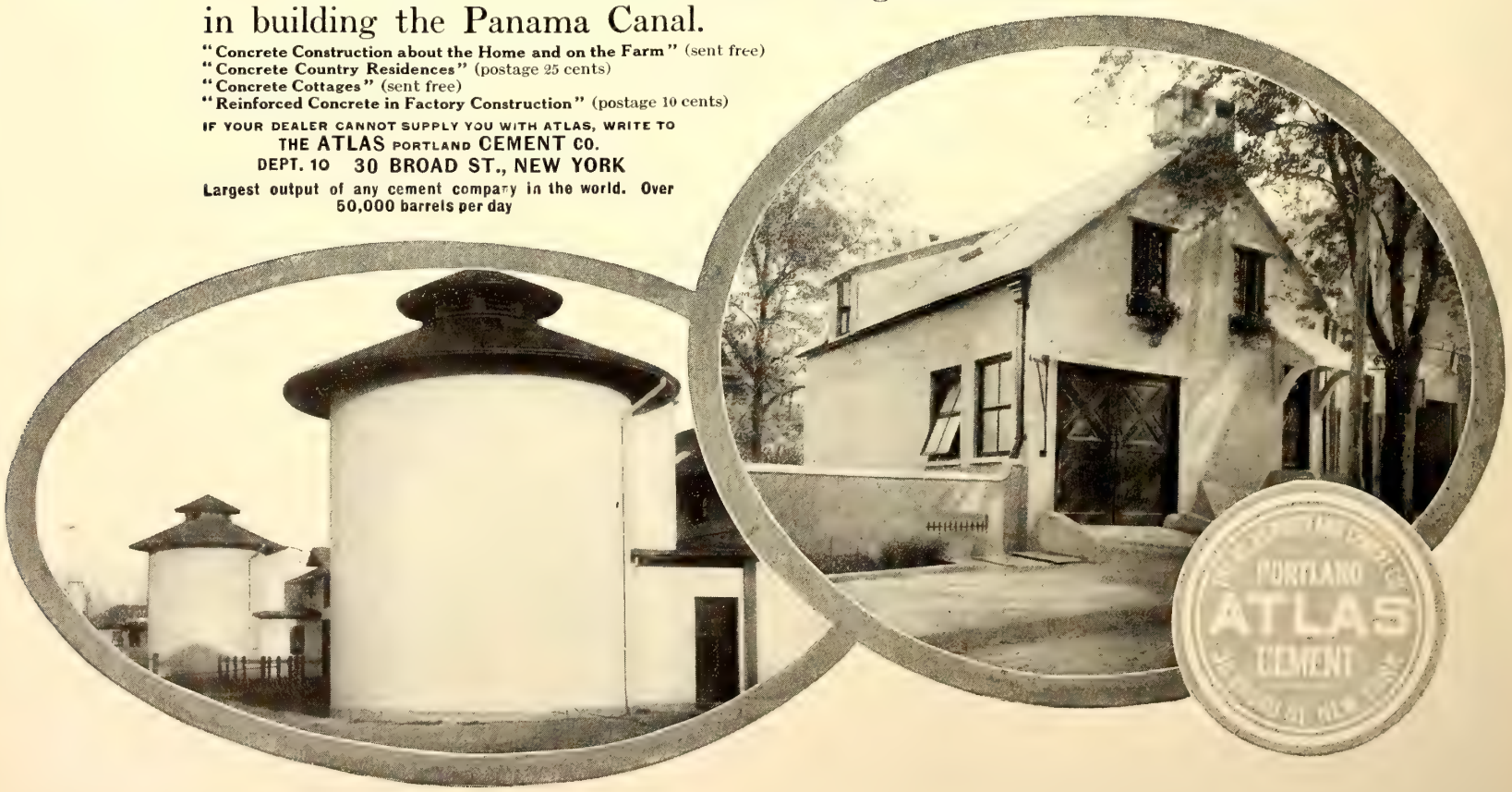
ATLAS PORTLAND CEMENT

produces uniform work of the best quality. It is not good in one spot and bad in another; it is all good, all equally good, all the same. It produces a building as permanent, lasting and durable as stone. It gives you a one-piece house, every inch of which is fireproof and sanitary. It is a delightful building material, a logical one and a typically American one. Only be sure you get the right cement—Atlas—the cement of which the United States Government bought 4,500,000 barrels for use in building the Panama Canal.

"Concrete Construction about the Home and on the Farm" (sent free)
"Concrete Country Residences" (postage 25 cents)
"Concrete Cottages" (sent free)
"Reinforced Concrete in Factory Construction" (postage 10 cents)

IF YOUR DEALER CANNOT SUPPLY YOU WITH ATLAS, WRITE TO
THE ATLAS PORTLAND CEMENT CO.
DEPT. 10 30 BROAD ST., NEW YORK

Largest output of any cement company in the world. Over 50,000 barrels per day



HOME-MADE SWEETENING

MAPLE SUGARING is one of those idylls of farm life that we suppose must pass away, at least for the larger part of the States where it was formerly practised. The maple groves are certainly disappearing, and maple forests are hard to find. Our fathers used to retain fifty or one hundred trees, as near the homestead as possible, and there they made several hundred pounds each year for domestic use. The sugar was very seldom sold, but was stored, generally in stone jars, where it was packed down in a semi-hardened condition. The product was delicious, far beyond most of that which now finds its way into our families.

The farmer made his spiles of elder wood, with the pith punched out, and drew the sap into pans and kettles. This was gathered with great care and boiled in huge iron kettles, with frequent skimming. When the syrup state was secured the product was taken to the house, cleansed with eggs or milk, boiled over the fireplace, and never adulterated. Very little unadulterated sugar ever goes into market to-day.

Planting new groves is logical. Many a family can save its sugar bill as easily as our fathers did. Their rule was ten acres of wood land out of every hundred, and of the wood land one or two acres were sure to be a maple grove. At the present time we could not do a better thing than plant maple windbreaks on the west or northern sides of our farms and homesteads. Our lawn maples I should hesitate to recommend for tapping, and yet very little harm will be done if the work is done neatly and the holes are so filled as to heal over completely. The idea is common that the sugar maple is not any longer a suitable tree for general planting, because subject to the attack of insects. This is a total mistake. The maple is just as good as ever for street and lawn purposes, only it will not endure rough work with the ax and saw. When planted it should be trimmed up to about the right place for limbing, and after that should not be touched by the saw. If you cut large limbs from the maple you let the sun in onto bark that can not resist the heat, and the next thing is splitting of the bark, after which come the worms. In other words, maple bark is not resistant to the full rays of the sun.

Now keep a few bees and grow your own honey, and your sugar bill will pass away. I would then plant my windbreaks with alternate basswood and maple; the first to feed the bees and the latter to furnish sap and sugar. You can from four hives take up all the honey that a large family can use; from a dozen hives you can take up seven or eight hundred pounds, and add to your income as well as decrease your outgoes. If you have an apple orchard or a fruit garden, especially of red raspberries, you own a vast amount of honey. It simply remains for you to find out whether you can collect it or not. The busy bee can do this, and they will do it if allowed to make a home with you. If not, it will go to waste, or it will go to your neighbor's bees. Those country places pay best that look out best for these side issues. The bee meanwhile is making your fruit trees bear better and your bushes to yield fertile crops; and it is the bee alone that can pollenate otherwise sterile flowers. By all means keep a few hives, averaging about two for each acre; and make maple sugar if you have been wise enough to plant the trees. We have fallen too much into the easy habit of buying our sugar.

Cottage Designs

THESE books offer to architects, builders, homeseekers and investors by far the most complete collection of plans ever brought out, while the price is so low as to place them within the reach of all who have an interest in the building of homes. The designs are compiled with a view to representing all grades of cost, from the simplest types of cottages, as illustrated in the first series, to the comparatively elaborate structures reaching to $10,000 or more, in cost, treated in the fourth series, so that examples are given covering nearly every requirement, with respect to cost, in inexpensive homes.

¶ No. 1. Cottage Designs with Constructive Details

A series of twenty-five designs of cottages, most of which have been erected, ranging in cost from $600 to $1,500; together with details of interior and exterior finish, all drawn to convenient scale, and accompanied by brief specifications. Illustrated with 53 full-page plates of floor plans, elevations and details.

¶ No. 2. Low Cost Houses with Constructive Details

Embracing upward of twenty-five selected designs of cottages originally costing from $1,000 to $3,000, accompanied with elevations, floor plans and details of construction, all drawn to scale, together with brief descriptions and, in many instances, full specifications and detailed estimates of cost. Illustrated by 61 full-page plates of floor plans, elevations and details.

¶ No. 3. Modern Dwellings with Constructive Details

A selection of twenty designs of artistic suburban dwellings erected in various parts of the country, at costs ranging from $2,800 to $7,000; embracing floor plans, elevations and constructive details, showing interior and exterior finish, and drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions, from photographs of the completed structures, and 61 full-page plates, of floor plans, elevations and details.

¶ No. 4. Suburban Homes with Constructive Details

Comprising twenty selected designs of attractive suburban homes, ranging in cost from about $3,000 upward; embracing floor plans, elevations and constructive details, showing interior and exterior finish, all drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions from photographs of the completed structures, and 75 full-page plates of plans, elevations and details.

One Dollar Each, Postpaid
(SOLD SEPARATELY)

MUNN & CO.
INC.
Publishers of Scientific American
361 Broadway, New York

VERANDAS

THERE is no part of a house that requires more generous treatment than the veranda. It is the house out of doors, or outside of doors. Its front walls are left off, and both the air and the sunshine can come in freely. In these days, when we are learning that we ought to live out of doors, the veranda becomes doubly important and attractive. A shut-up house is a breeder of every disease, but on the veranda you can sit beside a tuberculous neighbor with safety. There is no more reason why a reasonable animal should live shut up than one that can not reason.

A veranda should be at least nine to twelve feet wide, for the little excuses that are built on to many of our Northern homes are only for architectural display. A true veranda is big enough for a good stretch out or lay out. It will hold half a dozen Morris chairs or good rockers. It should go at least around two sides of the house, if not three or four. When you have got such a veranda as this you will want only a few rooms indoors, and so the veranda pays for itself.

Your veranda can be so arranged as to be convenient for dining when the weather is tolerable, and it can be most easily transformed into a sleeping-apartment. The hammock beds which are coming into vogue are just the thing. Hang them so that you can draw them up in the daytime under the ceiling, which ought to be always open to the rafters. You can let them down for an afternoon nap, or for an invalid friend, or for sleeping of warm nights. Now you have the difficulty that your veranda is open to flies and mosquitoes. We can fix that. Take wire screen, which only costs two cents a square foot, and you can screen the entire front of your veranda, or such part of it as you please, so that no fly can ever enter. Here you are out of doors, with a large roomy space, a chance to exercise, and you can read in comfort, or you can converse with your friends without any annoyance from the buzzing world. If you live in a mosquito country this netting is all important. Going around two or three sides of your house, it obviates the necessity of screening doors and windows. It must itself, however, of course, have one screen door.

The floor should slope slightly to carry off rains, and I advise you by no means to indulge in any white paint. Let the colors be modest and without a power to reflect light. I do not myself object to a good deal of sunshine, but most people would prefer to have their verandas on the west and north sides of the house. It depends a little upon the outlook. In some cases we command a superb sunset, in others a noble valley, or the sunrise. There is a power in the morning rays for health and giving strength which ought not to be lost. Old people and weak people need an eastern veranda. The effect of verandas architecturally is not to be overlooked. They are far better ornaments than a lot of unmeaning bulges of the house, and knickknacks in the way of bayed windows. In the Southern States a two-story veranda is not uncommon. It certainly is very rational, either for a city house or for a house in the country. The only trouble is that they can be utilized too easily for storing rubbish or hanging out clothes on Monday. For any purpose of this sort there should be a kitchen stoop or veranda.

BURLINGTON Venetian and Sliding BLINDS

Venetian Blind for inside window and outdoor veranda. Any wood; any finish to match trim.

SCREENS AND SCREEN DOORS

¶ Equal 500 miles northward. Perfect privacy with doors and windows open. Darkness and breezes in sleeping rooms.

Sliding Blinds for inside use. Require no pockets. Any wood; any finish.

WRITE FOR OUR CATALOGUE, PRICE-LIST AND PROPOSITION TO YOU

BURLINGTON VENETIAN BLIND CO., 339 Lake St., Burlington, Vermont

Among the Best Class of Women

you will find the Drama, the Stage, Players and all subjects pertaining to the Theatre of intense interest and daily discussion.

The Theatre Magazine

is the only publication devoted to the playgoers' interests in America. It is the most beautiful magazine published, and its elaborate photographic illustrations of Players, Scenes, etc., make it worth preserving in the library of every woman of culture and lover of the beautiful.

Each month's issue contains articles of current and advance interest about Stage Favorites, New Plays, Music and the Opera here and in Europe. Every article is illustrated from exclusive photographs, and written by the authoritative writers, critics, playwrights, managers and players themselves. The romance of "Behind the Scenes" is brought to your library table in all its fascinating dress. Descriptive articles on the new plays, advance information on the appearance of old-time favorites in new roles.

Fashions as seen on the Stage and designed by leading actresses for their own roles; showing how the Stage is the modern creator of Smart Dress.

Gossip of intimate Stage Life and anecdotes of famous players. Interviews with Stage Celebrities. Music and the Opera.

Photographic reviews of Stars and scenes from their plays. Interesting descriptions of Stage Novelties as originating in London, Paris and Vienna.

Photographs of Stage Favorites Free

The **Theatre Magazine** has no rival, suffers no competition. Once you begin to read it you will become a regular subscriber every year. Knowing this we make a special offer to get the **Theatre Magazine** into your hands for the first time.

Cut off this coupon, fill in and mail to us with one dollar. We will send you the **Theatre Magazine** for three months beginning with the August issue and your choice of two full-size photogravure photographs of your favorite actors or actresses from the list on the coupon. Cut the coupon off now and mail today. Address Circulation Manager

The Theatre Magazine, 28 W. 33d Street, New York

American Homes and Gardens Oct., '09
THEATRE MAGAZINE New York

Gentlemen:
Enclosed find one dollar, for which please send your magazine for three months and photogravure photographs of Lillian Russell, Maude Adams, E. H. Sothern, Kyrle Bellew, Fritzi Scheff, Frances Starr.

Name.....
Address.....
City.....

"Willowcraft"

is the only durable line of **WILLOW FURNITURE** made in the United States. We are the manufacturers, and will send this sample chair for $7, fgt. prepaid, anywhere east of the Mississippi River, Write for our catalogue of 150 other patterns.

The Willowcraft Shops
Box A NORTH CAMBRIDGE, MASS.

Van Dorn Iron Works Co.

PRISON, HOUSE & STABLE WORK

JOIST HANGERS
LAWN FURNITURE
FENCING, ETC.

CLEVELAND, OHIO

PREVENTS DRAFTS, DUST AND WINDOW RATTLING.

IVES' PATENT Window Stop Adjuster.

PATENTED.

The only Stop Adjuster made from one piece of metal with solid ribs and heavy bed that will not cup, turn or bend in tightening the screw. Manufactured only by **The H. B. IVES CO., New Haven, Conn., U. S. A.** (Fifty-page Catalogue Mailed Free.)

While you plan
BEFORE YOU PLANT
Let us know your problem and submit our
suggestions and planting plan

Practical, economical landscape service, based on thirty years' experience on fine large and small estates, public parks, etc. *Detail planting list and exact cost given with each plan.*

Our booklet "Beautifying Home Surroundings" will be sent free, prepaid, on request. Tells most practical way to plant for immediate effect; illustrates and describes best methods of handling the very problems that confront you. Make the most of your landscape—get our suggestions, booklet and 68-page Tree, Evergreen and Hardy Plant catalog at once.

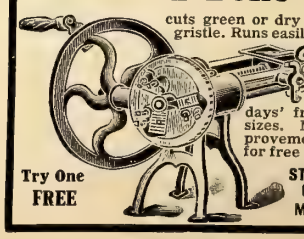
OVETT LANDSCAPE SERVICE

J. T. Lovett, Box 127, Little Silver, N. J.

The Only Cutter That Cuts Bone Across the Grain.

Every poultryman knows that feeding cut green bone is the only certain method of getting lots of eggs. Bone cut *across the grain* has far greater feeding value. The

Standard Bone Cutter



cuts green or dry bone, meat or gristle. Runs easily. Guaranteed best bone cutter or money refunded. Sent on 10 days' free trial. 11 sizes. Many new improvements. Write for free catalogue.

Try One FREE

STANDARD BONE CUTTER CO., MILFORD, MASS.

American Homes and Gardens for November

"Villa al Mare"

"Villa al Mare" is the charming North Shore home of George Lee, Esq., at Beverly Farms, Mass. It may easily take rank as among the most individual and picturesque buildings in America. Designed by Mr. W. G. Rantoul, of Boston, in a very individual modification of Italian, it is a thoroughly American home, very beautifully and quite uniquely situated. The illustrations are from new and original photographs expressly made for this magazine, and the text, by Barr Ferree, is in full sympathy with this beautiful subject.

A Concrete Garden Pedestal

The practical group of articles on concrete ornaments for the garden and how to make them will be continued in the third of the series with a detailed description of the method to be followed in making a pedestal of concrete for the garden. Ralph C. Davison, the author of these articles, presents his subjects in a thoroughly practical way, and his very plain directions have only to be followed to obtain fine results. The detailed descriptions of the text are supplemented with drawings showing how this garden ornament may be constructed.

The American Shetland Pony

Do you know that Shetland ponies do not necessarily come from the Shetland Islands? Fritz Morris not only explains how this is, but tells something of the American breed of Shetlands. The numerous illustrations are of great novelty and interest.

Bedroom Window Curtaining

The best, as well as the newest, things in window-curtaining are matters of special interest to the housekeeper. Very charming many of the latest products in this direction are. Mrs. Priestman, who is indefatigable in her search for novelties for the house, tells of some of the newest ideas, and presents photographs of some of her latest finds.

Japanese Gardens in America

The amazing interest that in late years has been developed in Japanese gardens, both at home and abroad, has yielded many interesting results in really notable Japanese gardens in America. Phœbe Westcott Humphreys writes entertainingly on this subject, and not only describes some notable examples of this type of garden in America, but indicates the lines and principles on which they are constructed. The article is richly illustrated with new photographs.

A Farming Experiment by Women

That women can be farmers may not be generally believed, but that they can actually perform all the work of an extensive farm S. Leonard Bastin proves to demonstration in a fascinating paper on this novel subject. The article is handsomely illustrated, and both shows and tells how this unusual occupation has been successfully carried on in the instance under discussion.

Four California Bungalows

Four interesting types of California bungalows are illustrated and described by Kate Greenleaf Locke. The illustrations include plans and interiors, as well as exterior views, and the excellent text is amply descriptive.

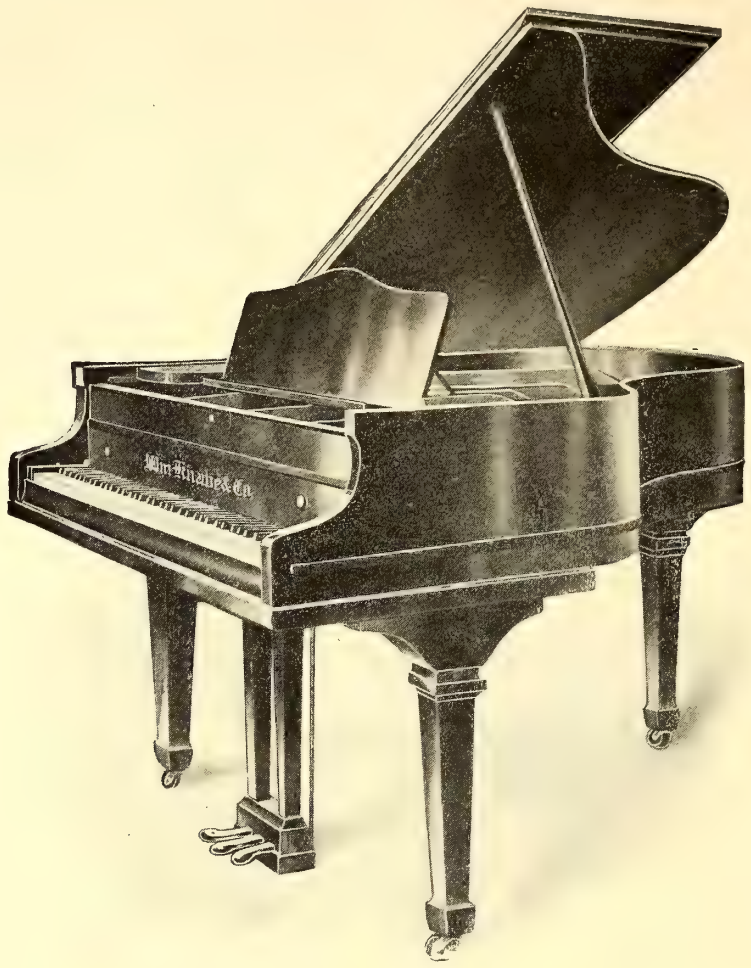
Hamiton House

Hamiton House is a fine old place in Maine that has, in the last few years, been completely restored by its present owner, and adorned with a beautiful garden at once in sympathy with the mansion itself and with the fine old spirit in which it was originally built. Louise Shelton writes agreeably on this place, which is one of the least known of the Colonial mansions of America.

The Departments

The regular departments—Monthly Comment, Correspondence, The Garden—will be found of more than usual interest, while a number of lesser practical articles round out an issue of special value and helpfulness.

There Can Only Be One Best



The Knabe

has been made of *best* materials, by *best* piano-builders, under *best* conditions

for seventy-two years

It is proclaimed

THE WORLD'S BEST PIANO

by the *best* musical artists and critics of two hemispheres, and it *best* satisfies musical taste of the highest order, and musical requirements of the keenest degree.

Style J *"upright"* **Grand $500—Mignon** *"horizontal"* **Grand $750—Knabe-Angelus $1050**

Knabe Pianos may be bought of any Knabe representative at New York prices with added cost of freight and delivery

WM. KNABE & CO.

439 Fifth Avenue Corner 39th St.

BALTIMORE NEW YORK LONDON

AMERICAN HOMES AND GARDENS

Price, 25 Cents. $3.00 a Year

CONTENTS FOR OCTOBER, 1909

PAGE

"Willow Brook House": the Front Entrance as Seen from the Garden Enclosure 374
Monthly Comment—The Aristocracy of the Soil 376
Notable American Homes—"Willow Brook House," the Estate of Francis E. Bond, Esq., Penllyn, Pennsylvania ..... *By Barr Ferree* 377
Concrete Ornaments and How to Make Them—II. A Garden Bench, *By Ralph C. Davison* 383
The Interesting Stucco House of W. C. Strong, Esq., at Waban, Massachusetts, *By Mary H. Northend* 386
The Byrdcliffe Colony of Arts and Crafts ..... *By Poultney Bigelow* 389
The Modern Country House ..... *By Francis Durando Nichols* 395
Furnishing the Nursery ..... *By Edith Haviland* 400
A Two-story House of the Bungalow Type 405
Floral Clocks ..... *By Charles A. Brassler* 406
Cobwebs ..... *By Carine Cadby* 409
Carrots as a House Decoration ..... *By S. Leonard Bastin* 411
Garden Notes xiii
Correspondence:
Problems in Home Furnishing ..... *By Alice M. Kellogg* xiv
Garden Work About the Home ..... *By Charles Downing Lay* xiv

Some New American Rugs — Home-made Sweetening — A Florida Fruit Farm.
Caring for Cannas and Other Roots During Winter.
The Sand-Box — Care of House Plants in Winter. — New Books.

Combined Rate for "American Homes and Gardens" and "Scientific American," $5.00 per year
Rate of Subscription of "American Homes and Gardens" to foreign countries, $4.00 a year
Rate of Subscription of "American Homes and Gardens" to Canada, $3.50 a year

Published Monthly by Munn & Co., Inc., Office of the "Scientific American," 361 Broadway, New York

CHARLES ALLEN MUNN, President
361 Broadway, New York

FREDERICK CONVERSE BEACH, Secretary and Treasurer
361 Broadway, New York

[Copyright, 1909, by Munn & Company. Registered in U. S. Patent Office. Entered as second-class matter, June 15, 1905, at the Post Office at New York, N. Y., under the Act of Congress of March 3, 1879.]

NOTICE TO CONTRIBUTORS—The Editor will be pleased to have contributions submitted, especially when illustrated by good photographs; but he cannot hold himself responsible for manuscripts and photographs. Stamps should in all cases be inclosed for postage if the writers desire the return of their copy.

"Willow Brook House": the entrance front as seen from the garden enclosure

AMERICAN

HOMES AND GARDENS

Volume VI October, 1909 Number 10

"Willow Brook House": the terrace front and terrace

Monthly Comment

The Aristocracy of the Soil

WELL-INTENDED persons, accustomed to the reposefulness of the average city flat or even the proud occupants of a single house of a row, who move out into the suburbs or the country are bound, sooner or later, to discover wholly new types of human nature. These types may rapidly classify themselves into two general sorts, entertaining and solemn. Both will be strange enough, but the solemnest of all are the aristocrats of the soil, the choice persons who were born and bred up on rich mother earth, and whose ancestors, for many generations, have been similarly favored.

THE aristocracy of the soil is one of the most persistent products of the countryside. It is not based on wealth, either inherited or acquired. It is not based on personal achievement or personal distinction. It is not based on the excellency of one's own deeds, nor of those of one's ancestors. It is not based on acreage nor estimated by tons of hay. It has nothing to do with personal culture and may be absolutely divorced from good manners. It rests on nothing at all but continuous, uninterrupted adherence to one spot, to a particular piece of soil, to which the aristocrat is as firmly rooted as the old oak in the forest or the ancient hemlock that has, apparently, always been exactly where it is found.

OBVIOUSLY it would seem that an aristocracy that is based on immovableness should itself be immovable and sum up, personify, express and absorb every quality of immovableness that so fixed a body might be expected to acquire and take to itself. For being itself the most splendid example and illustration of inertia now visible anywhere to the naked eye, how could it continue to be an aristocracy if it or any of its members were removed from the particular place in which their aristocracy had its origin? Clearly this is impossible; and so, although the aristocrat of the soil may lose his acres or sell them, he may be depended upon to retain just enough ground to enable him to flaunt his magnificent pretensions in the faces of the newcomer who has been bold enough or rich enough to intrude into a region where, before him, all were aristocrats, and of the soil, soily.

THE poor newcomer! He looks over the rural fields and woods and sees the same grass growing on the land as he has seen everywhere. The same kind of trees are in the woods and forests, the same sort of water in the streams and ponds, the same shrubs and flowers in the gardens as he has known and seen constantly. They flourish, too, as he has seen them flourish elsewhere, and Nature seems serene and smiling everywhere. Why should not he flourish here, if he could but purchase a plot or farm suitable to his needs and his means? Why not, indeed? Yet he forgets, as most of us are apt to do, the hidden danger in the water, the venomous snakes in the stones of the hillside, the noxious weeds that hide their poison in the flowers of the fields and forests. Of the aristocracy of the soil he knows nothing at all. He has not heard of the sacred caste of the countryside, that practises a self-cult more rigid in its applications and more difficult to understand than any high-caste Hindoo ever dreamed or thought of. Born and bred in the sound American doctrine that all men are equal, it has never occurred to him that these simple folk, whom he has looked upon as typically American, are, as a matter of fact, the visible exponents of the most highly developed aristocracy on the American continent.

HENCE the line of cleavage that cuts the newcomer apart from the old-timer. The new ones may be as aristocratic as you please and as proud as Lucifer before his fall, but so long as the aristocrats of the soil have any land, or remain, like oysters, fixed on the spot of their birth, there will be a separation between the two groups as mighty as any ravine in myth and legend. And it is a bridgeless depth which neither party can cross. For if, by any chance, the new people should absorb the old there will be no aristocracy at all that can even be so much as talked of; while it is quite unthinkable that the old aristocrats should make any advances to the new residents. It is unthinkable because no instances of the sort are known or recognized in the sacred traditions of the aristocracy of the soil.

AND so the green fields and gentle woods of our countryside harbor and support a mighty social conflict, not bloody, it is true, and perhaps quite supportable on both sides, but still strangely un-American, and, one should imagine, foreign to our soil. But facts will out, and one has but to settle among a lot of old-timers to ascertain how true this situation is and how singular are its manifestations. The aristocrats of the soil are thoroughly alive to their own merits. If they do not now own as much land as they or their ancestors once did, they make up, in a prodigious social and political activity, any shortcomings in acreage. Only real aristocrats are admitted to the lofty public offices; boards of education are dominated by the same proud class; public activity thrusts them into the boards of health; even the courts, when possible, are presided over and officered by fine old products of the fields and farms. So completely do they dominate their home districts that they regard the air and the roads as their very own, and when little aristocratlets come into the world the glad tidings are conveyed to the entire populace by heralds scurrying along the public highways, awakening a sleeping population with glad tidings that "It's a boy!" or "It's a girl!" Quite royal, indeed, are the ways of these old folk, who need but the salvos of cannon to complete their resemblance to actual royalty when a new mayor or descendant of some former mayor comes onto earth. Thus the circle of soil-aristocracy is rounded out, completed and perpetuated. It is a merry jest, and the merrier because the beneficiaries of the system take it so ponderously and so much to heart.

THE history of humanity is a history of change and progress, and one need not be a trained scientific observer to foresee that the end of the aristocracy of the soil is at hand. For many, many years there has been no prouder monarch of the forest than the chestnut tree, whose lofty height and rich fruit have excited the admiration of young and old alike. But of late an insidious disease has sapped the strength of these splendid trees and is rapidly killing them off. No one can look joyfully to the sudden end of the aristocracy of the soil, for it would mean the extinction of one of the weirdest types of Americans; but there is, perhaps, a simile between the fate of the chestnuts and the fate that must, sooner or later, befall the aristocrats of the countryside. The newcomers are yearly making greater and greater inroads upon the domain these good folk once dominated. It is only a question of time when they will be bought out and voted out. They will not like it, but the end is certain. Once deprived of public office their doom is sealed, for they will then become unimportant and inconsequential. The newcomer must wait, but he is bound to come into his own in due course.

Entrance to the formal garden

Notable American Homes

By Barr Ferree

"Willow Brook House"

The Estate of Francis E. Bond, Esq.,

Penllyn, Pennsylvania

IT WOULD be an unnecessary reflection on the taste of the skilful architect of Mr. Bond's interesting house—Mr. Horace Trumbauer, of Philadelphia—to say that its greatest charm lies in its lovely situation; it would be fairer, and much more accurate, to point out that in design and situation there is a singularly successful unity that is at once delightful and satisfying. It is a restful house, quiet and subdued in its structural fabric, straightforward and definite in its plan and outline, embellished with a very restrained amount of ornamentation, and so entirely dignified that its mere stateliness yields pleasure. Its situation is as peaceful as its own outer form. It stands beneath the shadow of an ancient wood. There are broad open fields before it, and other great stretches of openness behind it; yet a spur of woods has survived in between, and here the house is placed, with great tall old oaks behind it, and a fewer number mounting guard before it, with thicker growths to the right and left, so that, in a quite surprising sense, it is a house in the woods.

It is a low-spreading house, for, as the estate comprises about three hundred and fifty acres, there was no need of

In design and situation there is a successful unity at once delightful and satisfying

cramping the site. It is built of Harvard brick with white marble trimmings, and is two stories in height, with a pitched roof that contains the attic-story. In plan it is H-shaped, with projecting wings, front and back; on the left is a large L, with the longer member brought forward on the entrance front, for the accommodation of the service-rooms.

The exterior parts have been studied with that rare care that gives results without hinting the way in which they have been achieved. The white marble trim has been employed in a delightfully restrained yet completely ample manner. Its most conspicuous use is in the monumental entrance doorway, a stately composition of two Roman Doric columns supporting an entablature and curved pediment, the latter being broken in the center to provide space for a decorative cartouche, which is the single piece of applied ornament on the whole exterior. This handsome frame does not, however, stand alone. It rises immediately above a terrace, floored with red brick, laid in herring-bone fashion; it is reached by wide marble steps and enclosed within a marble balustrade. Other than these parts the front offers only windows and window-frames. The latter are of wood, painted white; the sills are everywhere of white marble, as are the lintels in the first story; in the second story the lintels are flat brick arches with marble keystones. The cornice is simply dentaled, and of wood, and the quoins on the corners of the pavilions are built up of brick, a surface modeling that helps but which does not intrude.

The admirable study lavished on the important parts of this front is repeated in the minor details. In the wing that connects the main portion of the house with the longer arm of the service building is a small door that admits to that department. It is but a minor feature, but is very well done. The door stands at the top of a small flight of marble steps; it is provided with a simple iron railing with brass ornaments. The doorway has but its frame, but this is surmounted with its hood, built of wood and painted white, a simple little pediment, open in the center, below, and supported on two plainly molded corbels. All the front of the house is beautifully planted with evergreens, rhododendrons and other shrubs.

The entrance front is elevated above the surrounding ground and the outer roadway by but a foot or two of brick base; the inner parts are supported by a terrace that, on the rear, rises high above the outer lower ground. It has a brick retaining wall, capped with a band of white marble. Immediately in the rear this space develops into a wide terrace, with paths of brick and broad stretches of grass. Architecturally the two main fronts of the house are identical in design, the doorways and window treatment in both being the same. Here, however, there is no enclosing balustrade, but one steps directly from the door onto the bricked path; on either side is a marble seat, and beyond is a grouping of sago palms. It is very soft and pleasant here, the outlook being into the grove of trees immediately below the terrace, and the architecture being at once so simple and so refined. The trees may be reached by a great flight of steps that descend from the center of the terrace; they have red brick risers and white marble treads. At the head of the steps are two sleeping lions, and above them, on the terrace, and at each corner, is a superb white marble vase. Save for a border of low-clipped box there is no other planting here. In addition to the terraces, front and back, the house has two porches. The larger of these is on the end of the left of the rear terrace and covers most of that side. It is a broad and spacious porch, with a roof supported on plain columns; it has much the general character of an outdoor sitting-room. There is a smaller porch on the opposite end in the corner by the dining-

The hall and the paneled stairway

The hall looking towards the fireplace

room. The service-wing has also its porch, which overlooks the very ample service-yard, which is enclosed within a brick wall.

The hall is the principal room of the house, and is a large and splendid apartment completely filling the center of the building. The main doorway opens directly into it without the intervention of a vestibule. It is paneled in oak to the ceiling, with broad-channeled pilasters that support the beams, which are strongly molded in white plaster with plain panels of the same material. The room is lighted by windows on the two longer sides, there being four in each, with a central doorway. The ends are filled with doorways and openings to the adjoining rooms. On the left the middle opening admits to the staircase, which is thus completely enclosed, and ascends to the second story between solidly paneled walls. At the summit they lead to a corridor that extends along the front of the house and from which the principal rooms open. The woodwork, including the molded frames of the doors and windows, is oak. There is a choice collection of old furniture here, including some elaborately carved cabinets and chests. The walls are hung with a two-toned green paper.

There are many objects of interest in the lower hall. The furniture is, for the most part, antique, and is covered with red silk damask and with tapestry, or with red leather. There are handsomely carved cabinets and many beautiful ornaments. The sidelights are silver in candle form, and are applied to the pilasters, while in two of the corners stand a pair of immense wrought-iron candelabra, fitted with electricity. The mantel is Caen stone, with red brick lining and a hearth of Welsh tile; the large antique andirons are of wrought iron. The floor is hardwood and is almost completely covered with a single vast oriental rug. A final note of color is supplied by the superb portières of crimson silk damask that hang before the great openings at each end of the hall.

An even more extended catalogue of the contents of this spacious room would, however, be quite deficient in conveying an idea of its charm. It is a room permeated with cheer. Its great size affords ample scope for abundant furnishings without the least suggestion of over-crowding; and its lighting is so bountiful and brilliant that the entire room speaks a hearty welcome that seems the true hall quality, a quality often sought, but seldom obtained so completely as here.

The other chief rooms are naturally subordinate to this splendid apartment. On the right are the library and den; on the left, the dining-room and breakfast-room. The terrace or inner front being regarded as the more important, the library and dining-room are on that side; the other rooms are on the entrance front.

The library is paneled in oak to the ceiling. The panels are arranged in two tiers, a lower or wainscot series and a longer upright row. The cornice is finely detailed, and the white plaster ceiling enriched with an oval wreath and garlands of leaves. The mantel is Caen stone. The room, being located in one of the corner pavilions, has windows on two sides. These are supplied with thin, white sash-curtains, and inner curtains of rich blue-green tapestry. The furniture is chiefly antique, and includes a number of interesting pieces. One whole side is completely shelved with built-in shelving. The sidelights are bronze.

A corridor adjoins the library and affords a means of access to the side porch from the central hall. Beyond it is the den, which, as has been stated, is on the entrance front. Its walls are encased with a high panel of oak, divided into narrow, upright panels, above which is a frieze of brown and gold, and a dentaled cornice. The wood

The den is paneled in oak

mantel has facings, lining and hearth of red brick, and brass andirons and fender. The window-curtains are in silk appliqué in rich tones of browns and gold.

The dining-room is on the opposite side of the great hall. Its general treatment is similar to that of the library. That is to say, the walls are paneled to the ceiling, which has a decorated oval within an ornamental frame. The mantel is Caen stone, and the fireplace has elaborately designed andirons of wrought iron. The room is, however, intensely individual in treatment and in design, and is in no sense a repetition of the library. The window-curtains are of figured green silk damask, and the antique furniture has seats of dark green leather. The sidelights are of silver, and in two corners are great silver altar-lights. A superb piece of Chinese silk embroidery is hung against one of the walls.

The breakfast-room occupies one of the pavilions of the entrance front. It has a low wainscot of wood, painted white, as in the other woodwork of the room. Above, the walls are hung with a light green paper in two tones. The mantel is wood with red brick facings, lining and hearth; the fireplace has brass andirons. The curtains are green and blue silk and the chairs are the old-fashioned rush-bottom kind. The sidelights are bronze.

The chief external feature of the estate is the Italian garden. This lies directly before the entrance door, on the farther side of the road by which the house is reached. It is entirely enclosed within a wall, built of Harvard brick, and without ornamental features of any sort save the plain piers at the entrance, with their simple caps of stone. The coping of the wall elsewhere is of brick. The entrance is effected by means of a low flight of marble steps, the enclosing piers of which have sloping marble slabs. At the base are two seated lions holding upright shields. It is extremely simple, but immensely effective.

The garden within has been arranged with fine taste. In a general sense it is cruciform in plan, and consists of a center running directly out from the entrance and two wings or transepts, applied to the middle of each side. The chief ornamentel features are confined to the center, which is finished with semicircular ends, front and back. At the farthest end the vista is closed with a semicircular pergola, of white Ionic columns with rafters stained brown. This is raised above the general level by several marble steps and has a floor of Welsh tile.

In the center of the garden is an octagonal basin, in the

The dining-room has a distinct individuality of its own

midst of which is a carved marble vase surmounted with a bronze cupid that serves as a fountain. The entire enclosed space is grassed, save for the gravel paths and the group of flower beds near the center. These are gay with flowers, and are filled, for the most part, with old-fashioned plants that are so generous of their flowering. There are flower borders all around the enclosing walls, and close by the pergola are low trellises, stained brown, for the support of trained fruit trees.

Each transept is entered by an archway or arbor of wood, painted white, and surmounted by a segmental arch. They stand in the center of a rectangular recess arranged in the body of the side walls, the space between the walls and the arbors being filled in with a screen of evergreens. The transepts are treated with delightful simplicity, and are enclosed lawns with floral borders next the walls. Each ends in a semicircular apse, in the center of which the solid wall gives way for a balustraded bay, beneath which is a built-in-seat. As elsewhere, the planting here is chiefly of the old-fashioned sorts, and is largely of hollyhocks and foxgloves. Wonderfully brilliant and delightful these transepts must be in their period of full flowering, with their simple quiet centers, and their rich gay borders!

Although the enclosing wall of the Italian garden emphasizes its separation from the rest of the estate, and at once creates and maintains its identity, the planting immediately exterior to it is really an integral part of it. The entrance is set back but a slight distance from the outer roadway, but there is quite sufficient space between it and the wall to permit of a generous planting of small trees and shrubs. On the other side, beyond the innermost wall, is a hedge of lilacs rising above the wall coping; and here, also, are many climbing roses and clematis which, rising

The corridor of the second floor

up without the garden, clamber over the wall, with long branches falling inward. Beyond are immense open fields, but some fine old oaks rise between the garden and the house, which on that side is thus slightly shaded. But, for the most part, the garden lies in the warm sun, for the better growing of the flowers and the greater brilliance of their blooming.

A final word or two on the stable. Although comparatively near the house, this is scarcely visible from any part of it save the kitchen wing. It is an immense build-

The library is paneled in oak and has a Caen stone mantel

ing arranged around three sides of a vast open court. The coachman's house is a cottage at one side of the entrance. It is built of Harvard brick, and has a shingled roof, with woodwork painted white. A characteristic feature is the wagon-shed on one side, with two immense concrete piers to uphold the roof. It need hardly be added that the equipment of this great structure is the best that can be had.

Dignity and calm of the most delightful and restful kind pervades the whole place. The house is spacious, and stands in an ample estate; yet, notwithstanding the excellence of its architecture, it is entirely unassuming and modest. In no sense does it dominate the countryside, for the fine old trees, beneath which it has been built, shelter it naturally and give it the choicest screen that Nature can provide when in one of her happiest moods.

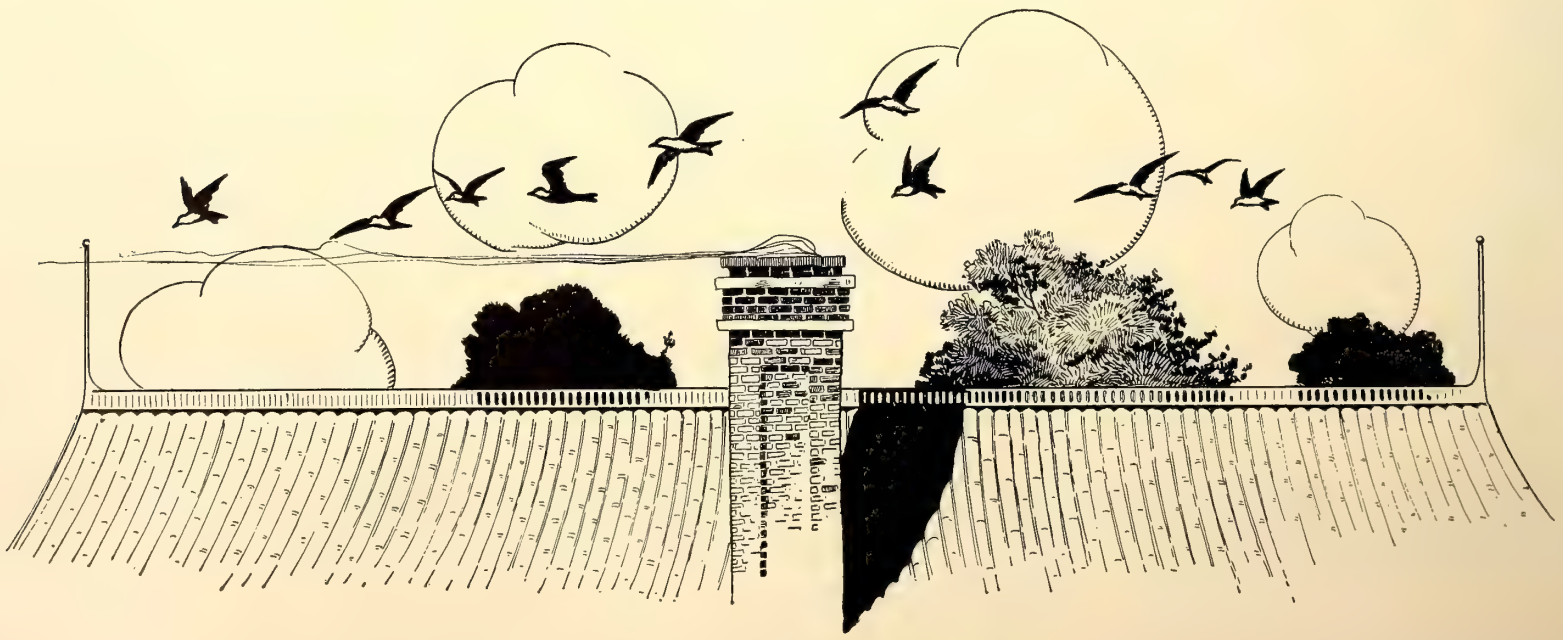
The fountain in the garden

The fascination of these trees linger long in memory. They give the house shade and environment; the mansion is, for all practical purposes, a house built in the woods; yet, as a matter of fact, it stands just within the wood boundary, sufficiently within the woods to be within them, and is still at its very borders. Hence, the remarkable association of the formal garden with the house. A garden in the woods is something hardly to be thought of, since a garden implies and necessitates sunlight, for which the woods are Nature's own protection. But the situation for "Willow Brook House" was so happily chosen that almost without it, space, and ample space, was obtained for a formal garden, entirely adequate in size, and laid out in the most brilliant sunlight, so that all sorts of beautiful plants and shrubs and flowers might flourish forth within it.

This is a result that the most skilful taste in gardening could not, alone, have accomplished. It is a result brought about by Nature herself, by the fortunate and delightful combination of Nature's own forces, seized upon and utilized in an exceedingly fine way by the designer of the place and developed in the most advantageous manner possible.

It is worth while to keep these elemental facts in mind, since real success in the development of a country estate—of a large country estate, of which that of "Willow Brook House" is a more than ordinarily interesting example — is largely dependent upon its natural advantages and environment. That very beautiful effects have sometimes been accomplished on what seemed to be unpropitious sites does not diminish the significance of the basic conditions under which such undertakings are best carried out.

A very fine result has been accomplished at "Willow Brook House" because the spot of spots was chosen for the house. It is easy of access to the outer world. It was a superb site for a house, considered simply as a house and without any other buildings or the relationship to anything else. It enabled the stable to be built at a closely convenient point, yet in a situation that kept it quite away from the residence. And crowning advantage of all, it permitted the laying out of a beautiful flower-garden at precisely the right spot and in a highly original manner. For the garden is part of the house, yet it is apart from it. It stands in direct relation to it, yet it is completely isolated. And this isolation is not from the house alone, but from the entire estate. This result is accomplished, of course, by the building of the brick wall by which it is surrounded. Yet everything has its relationship in such matters. This isolation was essential. The garden must begin and it must end. A line of demarkation of some kind must be made somewhere. The wall around the garden accomplishes this essential end, accomplishes it quietly and in perfect taste. And the glorious trees that stand without it on one side necessitate it and demand it. For such a house, so situated, an enclosed and separated garden was absolutely essential.



Concrete Ornaments for the Garden and How to Make Them

II.—A GARDEN BENCH

By Ralph C. Davison

THE accompanying illustration, Fig. 1, shows a concrete bench which is especially designed with a view of meeting the demand for a simple yet artistic piece of lawn furniture, and at the same time can be made with a minimum amount of skill and expense by those who are as yet uninitiated in this work. A detail drawing of the end-supports or the bench pedestals is shown in Fig. 2, and details of each piece used in the making of the wood mold for these end-supports are shown in Fig. 3. The assembled mold ready for placing the concrete is shown in Figs. 4 and 5.

Fig. 1—The finished bench

The first thing to do is to procure a 1-inch board, 12 inches wide by 16 inches long, and cut it to the shape shown in Fig. 3 at *A*. This is to be used for the bottom of the mold as shown in Fig. 4. Now cut another piece of board, also 1 inch thick, shaped as shown in Fig. 3 at *B*, and nail it down in its proper position on piece *A*. The next piece to make is piece *C* in Fig. 3. This piece forms the recessed panel; this panel as shown in Fig. 2 is only ½ inch deep, therefore this piece should be made of ½-inch board. Nail this securely in position, as shown in Fig. 4 on piece *B*. Be sure to bevel the edges of pieces *B* and *C*, as shown by the dotted lines in Fig. 4, for if this is not done one will have trouble in releasing the mold from the concrete when it is set or hardened. Now proceed to make the pieces *D, E, F, G, H, I, J, K, L* and *M*, all of 1-inch thick material, care being taken to follow the dimensions given closely. When these pieces are all made, assemble them as shown in Fig. 4, using as few nails as possible in securing the pieces to one another; for when the concrete is hardened, the form or mold will have to be removed from it, and the fewer the nails used the easier the form can be stripped from the cast. In making the form, use green or unseasoned wood, as it is less liable to warp when the wet concrete mixture comes in contact with it. Before assembling the mold, each piece should be shellacked thoroughly on both sides as well as on the ends. This will, in a great measure, prevent the mold from absorbing moisture, and will thus prevent any tendency of the mold to warp or buckle. After having assembled the pieces, as shown in Fig. 4, if for any reason the joints do not match up as well as they might, they can be filled with putty or plaster of Paris, care being taken, however, to have everything square and true.

After having trued the mold up, the inside of it should again be shellacked, and when thoroughly dry, a thin coat of fairly thick oil should be given to all parts of the mold which will come in contact with the wet concrete. The mold is now ready to be filled with the concrete mixture, which should be composed of 1 part Portland cement, 2 parts of good clean sharp sand, and 2 parts of trap rock or pebbles ranging in size from ¼ to ½ inch. The method of mixing the concrete is as follows: It is important to follow the directions closely, for if the concrete is not properly mixed, an inferior product will be the result. First the sand should be evenly spread on a level water-tight platform. The cement should then be spread upon the sand. Then, after thoroughly mixing the cement and sand together until it is of a uniform color, water should be added, preferably by spraying, and the mass thoroughly turned over and over by means of a shovel or hoe until it is of a uniform consistency of a fairly thick putty. To this mortar should be added the stone or gravel, which has previously been drenched with water, and the whole mass should then be mixed or turned over until the aggregate or stone is thoroughly coated with mortar. An ordinary garden rake is an excellent tool with which to distribute the stones through the mortar, as it will distribute them more uniformly than a shovel.

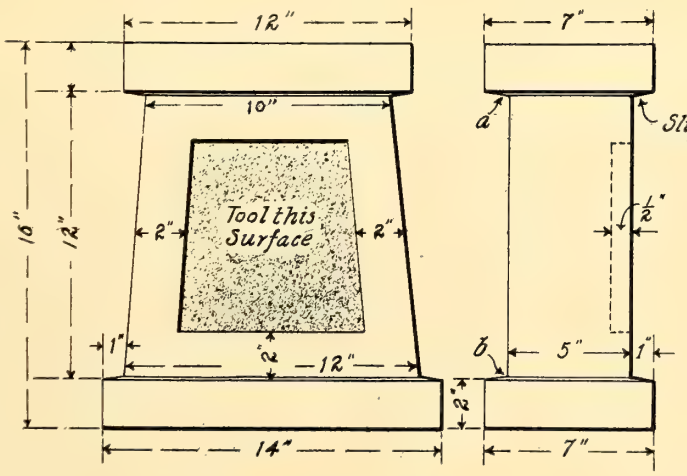


Fig. 2—Details of bench pedestal

The concrete thus mixed should be deposited in the form or mold as soon after mixing as possible. Under no conditions deposit concrete in molds which has been mixed more than two hours. To fill the mold use a shovel, care being taken to deposit the concrete into all of the corners. Tamp or tap it down well with the end of a piece of board. If the concrete has been properly mixed, this tamping will bring to the surface of the mass a slight skim of water. The mold should first be about half filled, and then a strip of Clinton wire-cloth or other steel reinforcing fabric should be placed in the form, as shown by the dotted lines in the plan-view of the assembled mold in Fig. 4. The proper size of wire-cloth to use is that known as 3-inch by 12-inch mesh, made of Nos. 8 and 10 gage steel wire. If wire-cloth is not available, any good No. 8 gage steel wire, cut and placed as

shown, will answer the purpose. After having placed the reinforcing, continue to deposit the concrete, and tamp it down until it is level with the top of the sides *D* and *E* of the mold. Scrape or float this surface level, and then take the cross-strips *L* and *M*, shown in Fig. 3, and secure them to the top of the mold and against the end pieces *H I* and *J K*, as shown by the dotted lines in the side elevation in Fig. 4. These crosspieces not only act as a form for the edges *a* and *b* of the pedestal, as shown in Fig. 2, but they also act as a brace to the sides of the form, and prevent them from spreading apart, due to the weight of the plastic concrete pushing against them.

After having secured these pieces in place, fill the portion of the mold thus formed flush with the top of the strips and the end-pieces *G* and *F*. Tamp the concrete down, and smooth the surface off nicely. The filling of the mold is now complete, and it should not be disturbed for at least twenty-four hours, after which the cement should be wet down occasionally with a spray for at least a day. After having set or hardened for two days, the cast can be removed from the mold, and can be set aside to be cured or to harden up. This is done by sprinkling it with water two or three times a day for at least seven to ten days. Care should be taken when removing the mold not to injure it or the cast, as the mold, if not broken, can be used over and over again. In removing the mold from the cast, first detach the cross-strips *L* and *M*, then the pieces *H, I, J* and *K*, then the end-pieces *F* and *G*, next the side-pieces *E* and *D*, and then the bottom-piece, composed of pieces *A, B* and *C*.. Before using the mold again, it should be thoroughly cleaned of any particles of cement which may have adhered to it. After having cleaned it well, oil the inside and proceed to assemble it as before, and cast the other pedestal for the bench in a similar manner as explained above.

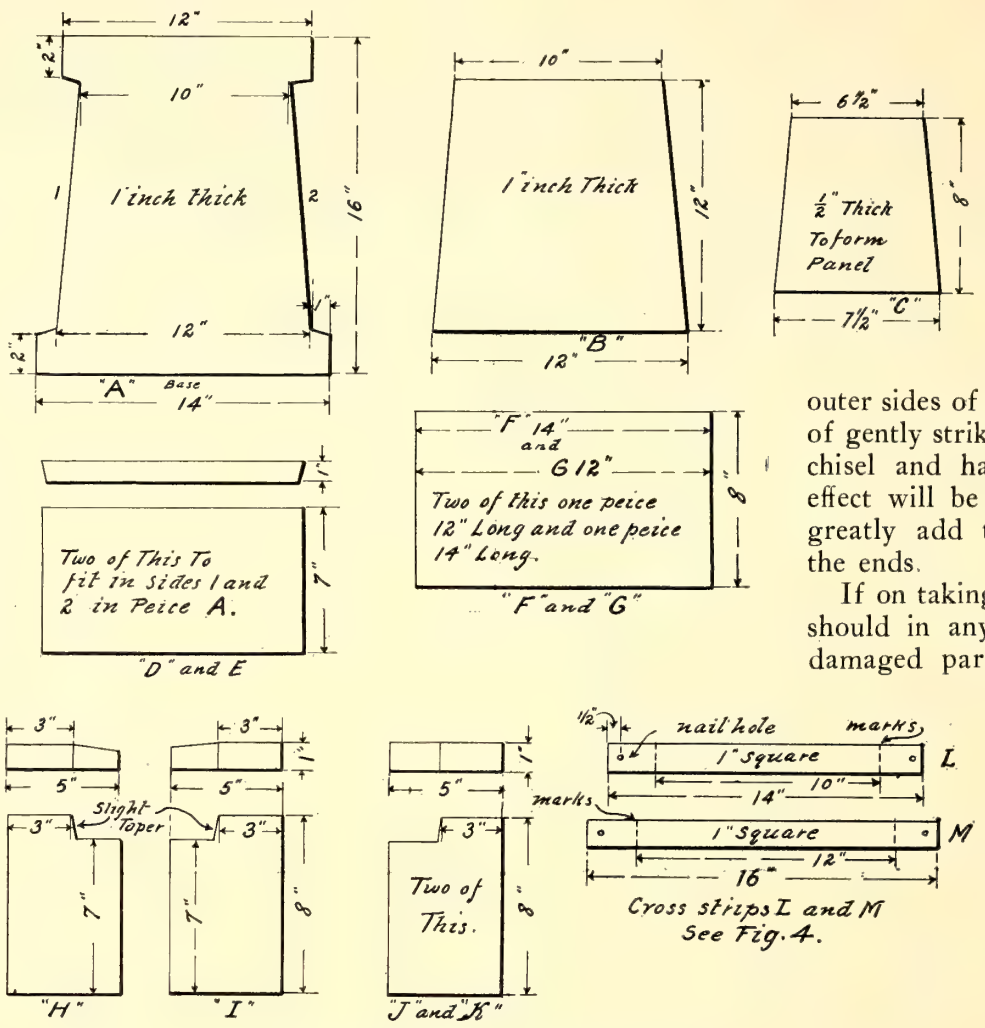


Fig. 3—Details of molds for bench pedestals

The next step is to cast the slab or seat of the bench. This is 5 feet long by 18 inches wide by 3 inches thick. The form or mold for this is nothing more or less than an oblong box, having a bottom 5 feet long by 18 inches wide and four sides each 3 inches high, as shown in Fig. 7. The bench-seat should be reinforced with the same size of wire-cloth as was used in the pedestals, or by three ¼-inch round rods spaced 6 inches apart. The reinforcing steel should extend within 3 inches of all four sides, and should be placed about ½ inch from the under surface of the slab, as shown in Fig. 7.

It would be well to clearly mark the under-surface of the slab, so as to know which surface the reinforcing is nearest to, after the slab is cast, as it is important when placing the slab on the pedestals to always have the reinforcing nearest the underside of the seat. Shellack and oil the inside of the mold, and proceed to fill it with a mixture composed of the same material as was used for the pedestals. First fill the mold to a depth of ½ inch, and then lay in the reinforcing as indicated in Fig. 5, and on top of this place the remaining 2½ inches of concrete and tamp it down well. This top surface will be the top of the finished bench-seat, therefore it will pay to take pains in finishing it to as smooth a surface as one can. Cure or harden the slab in the same manner as described for curing the pedestals. It is well, however, not to attempt to remove the under part of the mold for at least from seven to ten days. The sides of the form can be removed any time after forty-eight hours.

A good smooth surface can be given to the bench by wetting it down well and rubbing it with a fairly fine grade of carborundum brick. By tooling the recessed panel in the outer sides of the pedestals by means of gently striking the surface with a chisel and hammer, a good stony effect will be produced, which will greatly add to the appearance of the ends.

If on taking off the mold the cast should in any way be injured, the damaged parts can readily be replaced or filled in by applying and forming into shape cement mortar composed of 1 part cement to 1 or 2 parts of sand. Before applying this mortar, be sure to wet down the surface of the cast thoroughly, for if not, trouble will be had in securing a good and permanent bond. In setting the bench up, place the pedestals about 7 inches in from the ends of the slab, as shown in the illustration.

It is unnecessary to secure the slab to the pedestals in any way, as its weight will keep it in place. If one should wish the top edges of the slab beveled off, a triangular strip of wood can be secured along the bottom edges of the mold, as shown in the cross-section of the slab-mold in Fig. 7.

By following along the same general directions as given for making the bench, shown in Fig. 1, one may elaborate on the design of the bench pedestals. For instance, in Fig. 8 is shown a pedestal having curved outlines. The model for this is made similar to the mold shown in Fig. 4, with the exception of the sides. A simple way to make a form for a design of this kind is to use sheet tin or thin galvanized iron, as shown in Fig. 8. If one has not the facilities for cutting and bending the tin to shape, any tinsmith will do it for a trifling cost. All that is necessary to do in this case is to furnish the tinsmith with a full-sized drawing of the outline required and the width of the tin of which to make it. This

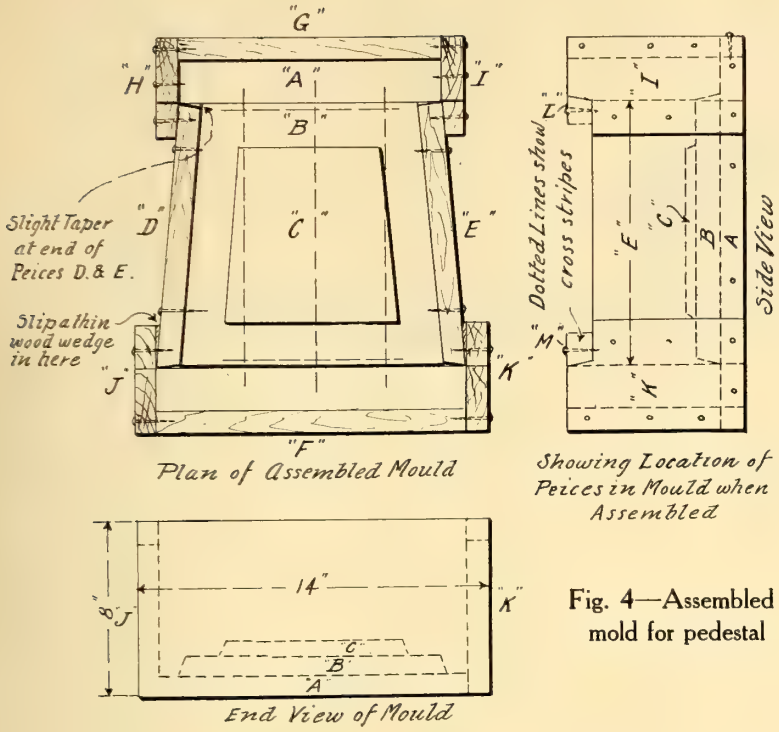


Fig. 4—Assembled mold for pedestal

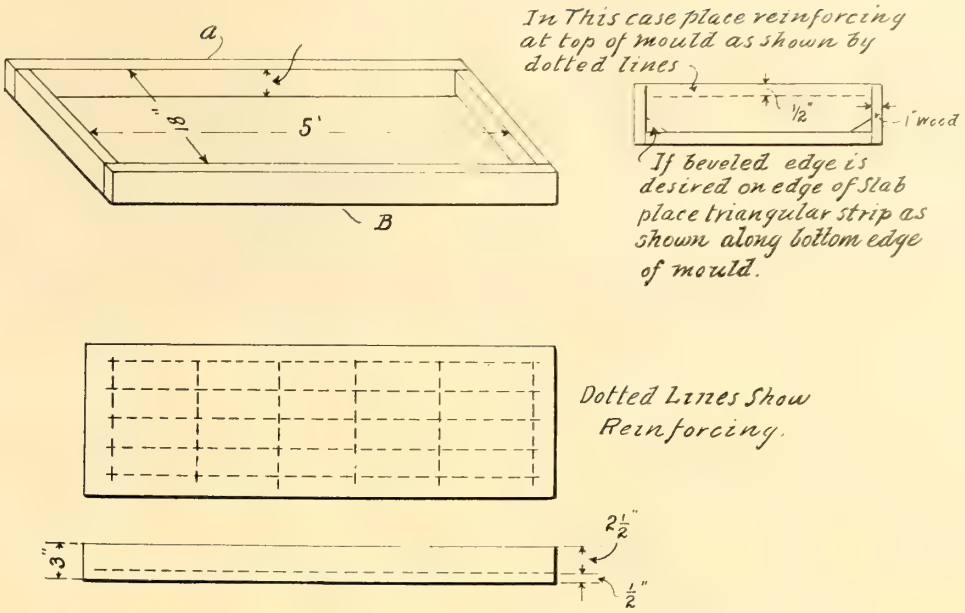


Fig. 7—Detail of bench top or slab showing reinforcing and detail of mold

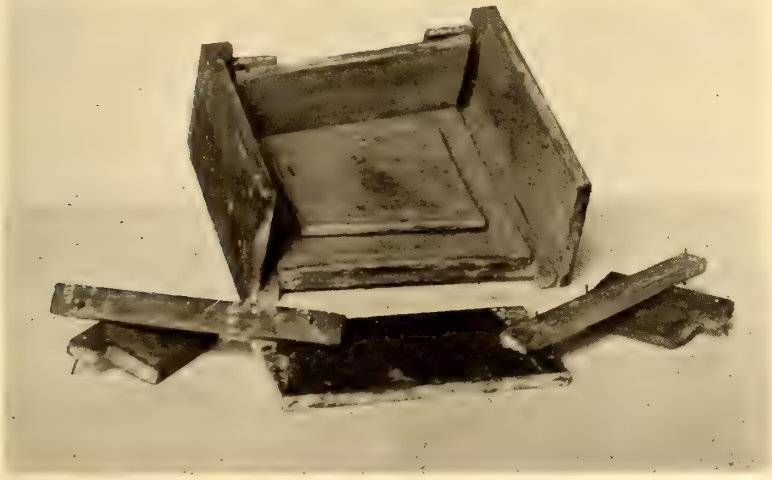


Fig. 5—The parts of the mold

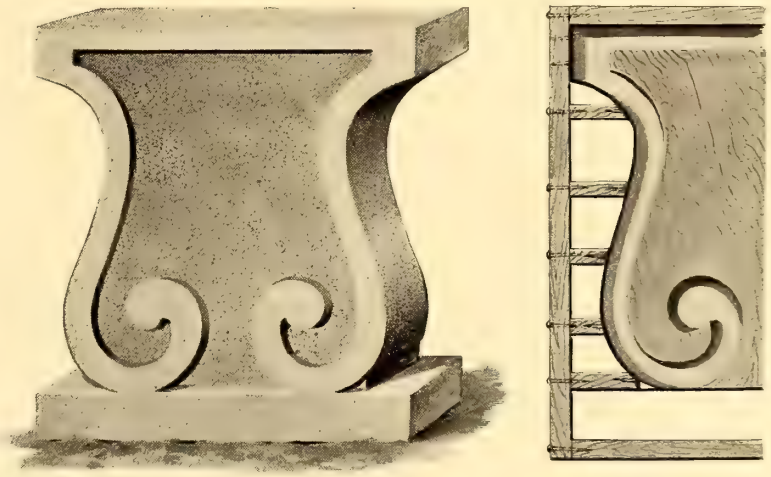


Fig. 8—The design for bench pedestal and half section of mold

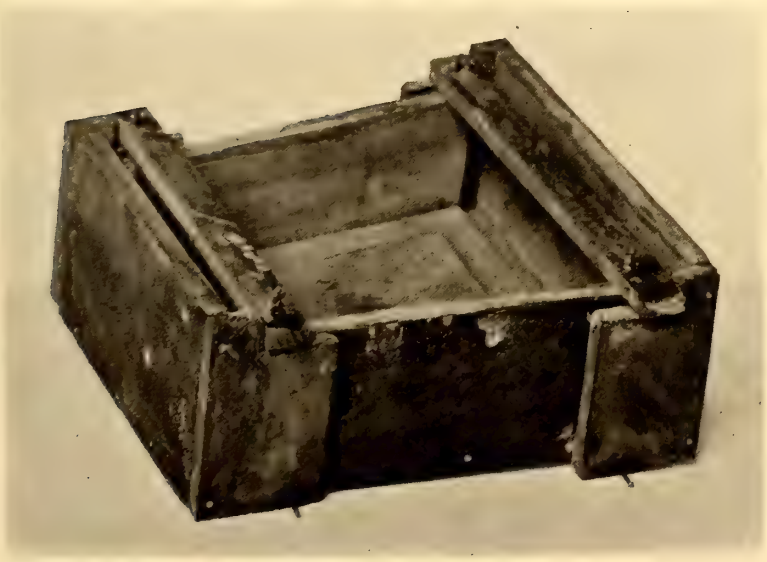


Fig. 6—The mold complete

Fig. 9—The texture obtained by using selected aggregates

width will be the same as the depth of the mold, and in no case need the depth of the mold be more than 7 inches. It is always well to brace these tin sides of the mold by means of strips of wood as shown in Fig. 8. This will prevent them from bulging when the concrete mixture is placed in the mold.

Some very interesting surface effects can be obtained in the pedestals by using selected aggregates or stones. When using this method, the concrete is mixed exactly as previously explained, with the exception that instead of using plain pebbles or trap-rock, one should use trap-rock and white marble or broken-up red brick. The size of the pieces used should not exceed ½ inch to ¾ inch. Place the mixture in the mold as explained.

The Interesting Stucco House of W. C. Strong, Esq., at Waban, Massachusetts

By Mary H. Northend

Photographs by the Author

AT WABAN, MASSACHUSETTS, is located the charming all-the-year-round home of Mr. William C. Strong, which was designed by Messrs. Hill and James, architects, of Boston. It stands well back from the roadway, on a slightly rising land, and in style might be termed an American development of the English cottage. The exterior finish is of stucco, tinted a light buff color, with trimmings and blinds stained a dark bronze green, producing a combination at once harmonious and effective.

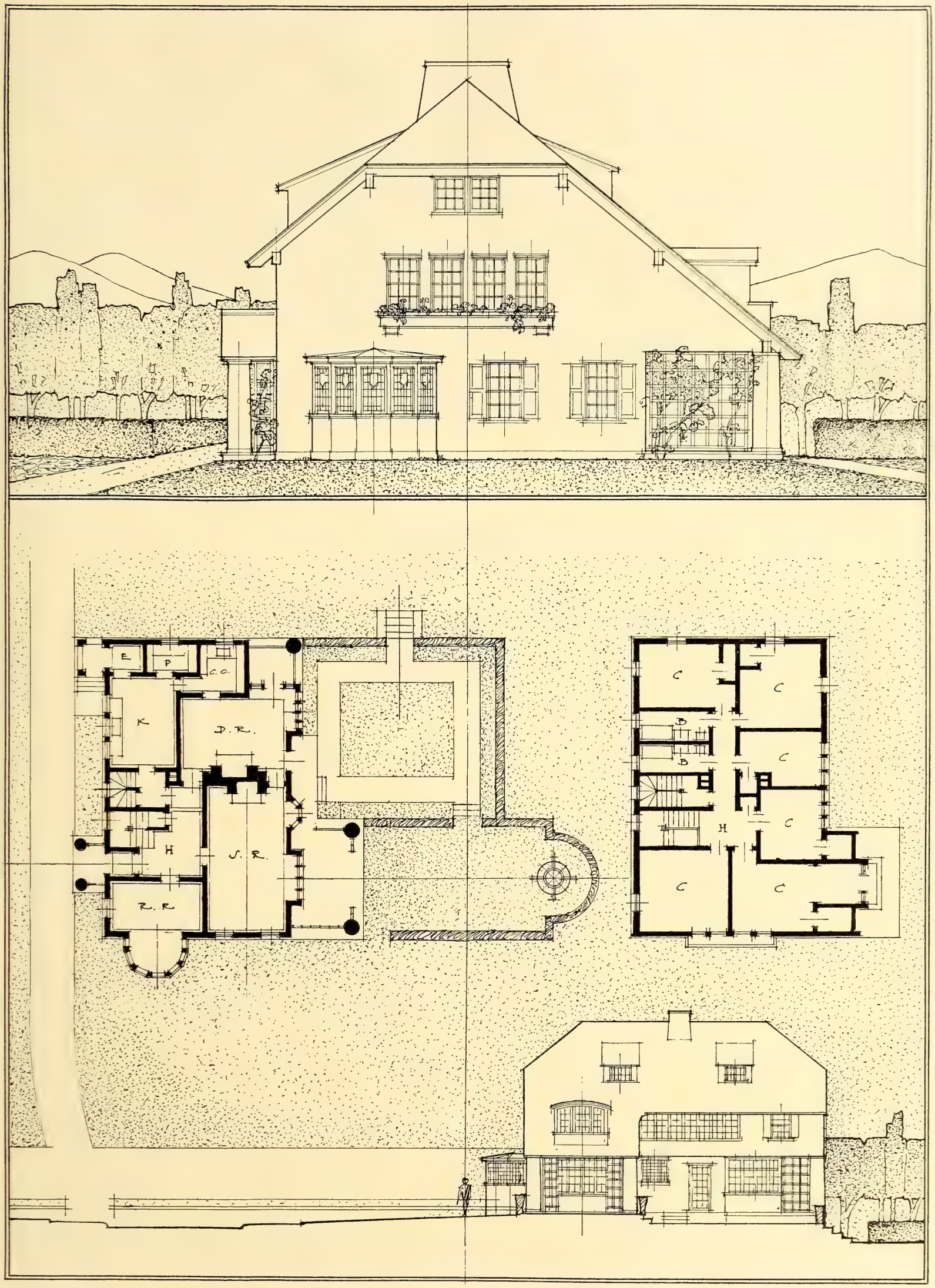
The shingled roof, with its deep overhang, reminding one of the old-time thatched roof, is painted a rather dark moss green, and in the rounded massing of its lines accentuates the impression of lowness and compactness conveyed by the general shape of the house and its closeness to the ground.

The small lights of glass, with which the quaint grouped windows are fitted, strengthen the effect of the old English type of cottage, as do the broad verandas, located at the rear of the house, and incorporated within the main building by the overhanging of the roof.

The house is susceptible to beautiful development from a landscape point of view, and bids fair in the near future, when the flowering vines that have started to clamber over the ivory-tinted latticework, arranged as a partial screening for the verandas, reach the height of their perfection, and the wealth of shrubbery planted all about is in its prime, of being vastly more attractive than at the present time.

Entrance from the highway is by means of a narrow graveled path, flanked on either side by stretches of sward, which leads to a quaint covered porch supported by stout columns. The entrance door gives upon a rather small hall-

The style may be termed an American development of the English cottage



Floor plans and elevations

The window-seat of the living-room

way, simply and attractively fitted up, from one side of which ascends a winding staircase.

From one end opens the living-room, a spacious apartment connected with the rear veranda by means of long French windows. The woodwork is painted white, and the wall space above the low wainscot is hung with green grass cloth. Dainty cretonne curtains shade the small-paned windows, and beneath the broad side window extends a low window-seat cushioned in tones harmonizing with the wall hangings. A feature of the room is the large open fireplace at one end, to the right of which extends a built-in bookcase. Other bookcases are arranged along the wall space beside the window-seat, and their shelves contain many volumes highly prized by the owner. The furniture consists chiefly of Colonial pieces, and the walls are adorned with numerous fine pictures as well as a beautiful old-time mirror.

To the right of the hallway opens the reception-room, a cosy apartment, finished in white, the walls hung with soft-toned paper of dainty pattern. A great bow window shaded by muslin curtains occupies a prominent place at one side, and furnishes a pretty nook in which to lounge and contemplate the extensive view obtainable from this point. The floor is of polished hardwood, as are all the floors throughout the house, and it is partly covered by a large art square. The furniture in this room, as in the living-room, is Colonial in style, and includes some of the choicest specimens of Chippendale chairs.

Beyond the living-room is the dining-room, finished in cypress, stained a soft-brown, the plaster walls above the high-paneled wainscot tinted a light buff, and edged with a narrow brown molding. A large open fireplace, constructed of red brick laid in white mortar, is found at one side, and it is topped with a broad mantel supported by richly ornamented standards. A large bow window, beneath which extends a cushioned seat, lights the room from the rear, and long French windows connect at one side with the smaller veranda, glass enclosed and used as a conservatory, abloom with sweet-smelling plants.

The service department opens from a narrow passage which separates it from the main hallway, and includes a large kitchen, with high dresser arranged at one side, suggesting the Dutch or Colonial kitchen of olden days, as well as a good-sized pantry and spacious china closet. It is entered from the exterior by a separate door.

On the second floor are six chambers and two large bathrooms, and on the third floor are more chambers, and trunk and storage rooms. The house is lighted throughout by electricity, and heated with steam, and its cost complete was $9,400.

It is, I think, quite easy to discover the real points of interest in this modest little house. They do not need discovery, indeed, for they stand frankly and openly before one, for he who will recognize them. There is, to begin with, a comparatively modest size; yet it is ample and sufficient for the demands made upon the house in the matter of accommodations. Surely, more than this is not needed, and when this has been accomplished, one of the first essentials in house design has been carried to a successful conclusion.

Then, again, there is fine taste shown in the design. This is, often enough, and perhaps quite rightly, the aspect of the house that appeals to most people. We can all see the outside of a house, but comparatively few of us ever get within it. The design here is as modest as the size and dimensions of the house, yet it is a design of thorough charm, of distinct originality, and of quiet graceful beauty.

Mr. Strong merits hearty congratulations on his beautiful house. The money-cost was moderate, yet the beauty and convenience obtained is thoroughly sufficient. The sheets of architectural drawings which accompanies this article will make clear some of the steps taken by the architects in reaching this satisfactory result.

The dining-room has a high wainscot

'Tis a real city of the forest

The Byrdcliffe Colony of Arts and Crafts

By Poultney Bigelow

Photographs Copyrighted by Jessie Tarbox Beals

"FUGE MAGNA! Licet sub paupere tecto
Reges et regum vita praecurere amicos!"

—Horace, Epistle X, to his friend Fuscus, 2000 years ago.

Free translation: "Don't put on too much style. The right sort of girl will prefer a straw hat on your head to a golden crown on any others!"

THE provocation to this poor effort of mine consists in a set of admirable pictures made by Miss Jessie Tarbox Beals, of New York, and a flattering invitation from the editors to write something worthy of these illustrations. From Ralph Radcliffe Whitehead or his wondrous wife I have no permission, much less from Birge Harrison, and in these lines I am deliberately jeopardizing my friendship with them in the higher hope of doing something for the encouragement of real living art in my country. Before this manuscript can see the light I shall be on my way to the Far East, escaping from merited censure, and yet I venture to recommend my readers to place themselves in communication with the heads of this remarkable colony if they are interested in the success of this work as is the writer of these indiscretions.

To him who motors, or drives, or bikes, or tramps in the southern slopes of the Catskills no more delightful objective can be imagined than the neighborhood of Woodstock, in Ulster County, New York, which lies maybe a dozen miles westward from the Hudson River, and not to be confused with a dozen other Woodstocks of lesser charm.

To this neighborhood came a pupil of the great Ruskin some years ago, and here he determined to plant the seed of truth in handicraft, to found in this most illiterate county of the Empire State a colony devoted to the artistic work which make us to-day honor the name of Medici and medieval Florence. With his American wife, herself an artist, he bought a large tract of forest and here within the last five years has arisen one bungalow after another, each the home of artists in one form or another, painter or sculptor, weaver or dyer, metal-worker or wood-carver, in short, here is a city of the forest where every tree is a soul in sympathy with the workers under its branches.

You already detect my allusion to Ralph Radcliffe Whitehead.

The idly curious are not invited, and, thank God, automobiles are barred as well; also, all merely mechanical forms of progress, intellectual or otherwise.

In this atmosphere does our eminent landscape-painter, Birge Harrison, conduct his summer school made up of sixty or more members of the Art Students' League. He has a beautiful home here on the edges of the colony proper and his students of both sexes are an immense addition to the social gaiety of Byrdcliffe, for such is the name of this sylvan paradise.

Is not the very name of Birge Harrison's retreat an invitation to close one's life in sylvan savagery, Huckleberry Fen? And his post-office is Bearsville! Do not we instinctively call up visions of ancient sages communing with God in the jungles of India or in those sacred solitudes of Egypt where Osiris came upon the earth? To see Birge Harrison in the midst of his disciples, the sacred phalanx of white umbrellas and studio aprons, one might imagine a spirit from a higher world come to this stony segment of a Philistine county to do a labor of love as Krishna did for truth in his time. May the life of this noble man long be spared is the prayer of his pupils, for while many are ready to fill a pulpit on Fifth Avenue, few there are so eager to preach in the wilderness.

The artist is your true man of the people, for he fears no comparison with any man—he fears no revolution of government, for any political change would leave him still amongst the masters.

Therefore, when each Saturday night the colony has its dance in the casino or gymnasium, no dress-suit is permitted on the floor; young men and maidens disport themselves in such studio or working-dress as suits their complexion or purse, and such dancing as at Byrdcliffe is not to be found anywhere else this side of the Hungarian Danube.

Ready for the evening fire

Just boards, a roof and a chimney

A use of native stone

A nature lover's home

A living-room fireplace

A chimney of real utility

Photographs Copyright

The bungalows are tinted the color of a partridge

Treasures from a studio

Bungalow life beneath the trees

An open stairway

A true home in the woods

A quaint interior

DCLIFFE COLONY OF ARTS AND CRAFTS

Jessie Tarbox Beals

Ready for the evening fire

Just boards, a roof and a chimney

The bungalows are tinted the color of a partridge

Treasures from a studio

A use of native stone

A nature lover's home

Bungalow life beneath the trees

An open stairway

A living-room fireplace

A chimney of real utility

A true home in the woods

A quaint interior

BUNGALOWS AND COTTAGES OF THE BYRDCLIFFE COLONY OF ARTS AND CRAFTS

Photographs Copyrighted by Jessie Tarbox Beals

Mrs. Whitehead is famous for the art with which she has revived the stately and quaint dances of our grandparents, and each dancing-night the company is surprised by another addition to the list already large. There are plenty of musical volunteers at Byrdcliffe, and these succeed one another at the piano to the delight of the dancers, to say nothing of amateurs whose talents and good nature provide the assembly with extra instruments now and then. One looks for novelty, quite as a matter of course, and is seldom appreciated.

The last Saturday of the season brings with it a magnificent fancy dress ball, and such marvels of costuming fished up from chests where have been stored the clothing incident to studios where models must be draped for every taste.

It's all a beautiful dream to me, that final dance of last autumn, the exquisite taste, the simplicity, the absence of money-display, and then the refreshments were not at a long bar, but each bungalow spread a carpet under the trees, hung Chinese lanterns in the branches, and there they entertained the guests who reclined like the gods of Homer and forgot the hours in the joy of festive relaxation.

Byrdcliffe proper is the summer and winter home of the Whitehead family, a home in the best old sense of that word, the house of massive timber, the interior made by artists in woodwork, the whole a thing which appears to have grown out of its happy invironment. The view from the front takes in an immense range of mountain and valley, blocked to the south by the range of Lake Mohonk. In the foreground is the great barn, for Ralph Whitehead is a mighty farmer in addition to his other many accomplishments. All the buildings are in harmony as to color and design with the main house, none painted, merely stained to preserve the wood in its natural beauty of color.

These bungalows are scattered, some forty or fifty it would seem to me, throughout this great forest demesne, and the inmates live in sandals, short skirts, sailor jumpers, gypsy attire; the men mainly in the comforts of outdoor camp-life.

The inmates of this great park avoid, so far as possible, the conventional paths and concomitants of resorts like Tuxedo and Onteora. They are here to draw inspiration from nature; nature is their mother; they love her and make her their model.

And thus it happens that a stranger might easily drive past the whole colony and ignore its presence, for no sign is there by way of advertisement, and the bungalows are all tinted to the color of the partridge in order to attract as little as possible the eye of the gossip-hunter.

There is no more delightful objective on the slopes of the Catskills than the neighborhood of Woodstock, Ulster County

Before it had been my good fortune to meet the leading spirits of this wondrous community, I had heard of it through some carpenters who worked upon my house, some 15 miles from Byrdcliffe.

"Them there folks is nothing but a passel of cranks!"

"What makes you think so?" queried I.

"Why, because they don't do their carpenter-work same as we do!"

This it was that first prejudiced me in favor of Byrdcliffe.

To write about this colony is difficult for me, because it is never easy to describe on paper a thing that depends wholly upon the spirit of its leaders for the success which it now enjoys.

This success is linked with no secrets, no spies can go there and filch from it the means of making a duplicate. There is but one Whitehead couple; it is a secret as free to all as the mobilization of the German army, the wit of Mark Twain, the dramatic dominion of Calvé.

Perhaps I can explain better if I reverse the picture and tell what Byrdcliffe has declined to do. We know that most colony experiments have failed through socialistic or communistic government. Byrdcliffe is frankly a benevolent despotism. Whitehead is the absolute monarch, and no one is tolerated who is not in sympathy with his rule. No idlers or mere pleasure-seekers are allowed to encumber these classic shades. Work in the broad field of art is the basis of Byrdcliffe success. Friends of the colony, properly introduced strangers are made welcome and are given good quarters and food at reasonable rates in the club house at the center of this Medician arcadia; but if they do not prove to be of the right stuff they can not hang long upon the skirts of this sylvan goddess.

Absolute monarchy saves the colony from a vast amount of wrangling and wasted time which has usually wrecked other efforts in this direction. The Byrdcliffe despot is the most gentle and admirable tyrant, for under him the colony knows no deficits, is never assessed! Would not Onteora jump with joy were it subject to a Ralph Whitehead? And as for Twilight Park and others of that neighborhood in the upper Catskills, they would gladly repudiate republicanism if they could claim for a monarch so munificent a master as Rajah Ralph!

A double house of cozy build

No problems are being solved at Byrdcliffe. The founder and proprietor is an artist, and he wants to fill his bungalows with men and women of kindred taste. There is the secret in a nutshell.

Much of his fortune he devotes to paying the salaries of instructors in different branches of handicraft, and, needless to say, the salary of an American artisan is higher than that of the average college professor. Whitehead is virtually the president of a high-grade art university, equipped with an admirable faculty, laboratory, library, gymnasium, recreation grounds and a course of work superior to that of anything of its kind in the Western World.

Of course, he is an idealist; so was Robert Fulton, so was Samuel F. B. Morse; so have been most of the men who have deserved the grateful prayers of generations to come.

It was a bold move, this of bringing a colony of artists into the heart of a county largely made up of mountain, rock and forest, where the farmers are poor and illiteracy notorious, where the moneyed aristocracy are owners of brickyards or factories, and such like folk who pollute the noble Hudson with their foulness and denounce as cranks such as want to see our streams kept clean.

Miracles work to-day no less than in the past, and for one I believe that Byrdcliffe is destined to work wondrous changes in our country. Just now this work is much hampered by the tariff of alleged protection, but if in time that should be swept away and tariff for revenue only become once more the national policy, then would the work of the Whiteheads be able to compete in a fair field with any work of the same kind anywhere. Art is a child of liberty, and we shall never have American art until we have first American liberty to trade with all the world without exception.

A bit personal, you say, as a matter of opinion. Truly, yes, and so intended. And even though the editor gasp a bit when he comes to this very apropos remark, he will, I trust, let it stand, for it proclaims a doctrine very dear to me and one which I wish were very dear to the hearts of most of my countrymen.

But let it pass. I see no reason at all why one may not express an honest belief honestly without being silenced by the singular cry of "Politics!"

I look upon the movement that Whitehead has started at Byrdcliffe as one of the very much-needed lumps of leaven this great country of ours is so much in need of. The great masses of the people not only do not understand artists, but they very distinctly do not understand the value artists are to the world they live in. Eccentricity is, unfortunately, sometimes popularly regarded as synonymous with the artistic. Nothing could be more mistaken. There is absolutely no relationship between the two. They have nothing in common, and do not even so much as possess a speaking relationship. It is true some artists are eccentric, and sometimes wierdly so. But it rarely happens that this eccentricity, offensive vulgar posing, this pratting of abilities not possessed, this aping of knowledge not known that to the popular eye passes as an eccentricity—it rarely happens that this is personified in a true artist of note. The name of Whistler leaps to the lips, but Whistler was so stupendously great that few of his contemporaries could appreciate him.

The planting of an artist colony in the middle of a region that is apparently quite without intellectual resources is bound, sooner or later, to have a pronounced effect on the people without it. It is certain to come, and the beneficence of its juxtaposition is destined to be very widespread. I hope it will come soon, and I hope, with a mighty hope, that its influence will be very wide.

We need it, and we need it everywhere. We need it in the Catskills and we need it in our cities. We need it on our Western plains. We need it in the soft climate of California and Florida. We need it on the mountains and in the valleys. In short, the spot in this United States in which we do not need it has not, to my knowledge, been discovered by any one.

So Ralph Whitehead merits richly godspeed in his noble work. For it is noble work and nobly done. He has been fortunate in his situation, in the place he has selected for carrying on his great undertaking.

Fig. 1—The residence of Charles C. Watts, Esq., at Germantown, Pennsylvania

The Modern Country House

By Francis Durando Nichols

THERE are certain features which are absolutely necessary for a house that qualifies as a modern dwelling. Each of the dwellings illustrated herewith has an atmosphere that distinguishes one from the other with candid accuracy.

Messrs. McIllraine and Roberts, of Philadelphia, Pennsylvania, designed the house shown in Figures 1, 2, 3, 4, and 5, and built for Charles C. Watts, Esq., at Germantown, Pennsylvania. It is a fine example of the modern American house. It is well placed on a "flat-iron" piece of property with a rapid rise from the roadway, and, on account of its position, access is obtained to it from three different points.

The house is constructed of rock-faced local stone, laid with wide white mortar joints. The building is brought close to the ground by the massive roof of slate which slopes down over the second story, forming a roof for the piazza. The great massive stone piers and arch give solidity to the entrance.

Fig. 2—The solidity of massive stone piers and arches

The hall is trimmed with chestnut finished in its natural soft brown color. It has a paneled wainscoting above which the walls are covered with a two-tone mustard-yellow wall-paper. The ceiling is beamed and ribbed. The living-room is similarly treated and has a brick fireplace and mantel. The billiard-room adjoining is also trimmed with chestnut, and has a paneled wainscoting and a beamed ceiling. There are two bay-windows with window-seats in this room.

There are five bedrooms and two bathrooms on the second floor; the bathrooms have tiled wainscotings and porcelain fixtures, with exposed nickelplated plumbing. The servants' bedrooms and bath- and trunk-room are on the third floor. The cellar contains the heating-apparatus, fuel-rooms and laundry.

Mr. Stanley Ward's suburban home in Bronxville, New York (Figures 6, 7, 8, 9, 10 and 11), is a high type of the ideal suburban home. It has fine lines which are well carried out and emphasized by its artistic coloring, which is further enhanced by the fine setting of trees with which it is surrounded.

The house is of frame construction, covered with a rough plaster finish on metal lath. The trimmings are painted a soft brown color, while the roof is painted a reddish brown.

The interior arrangement is quite complete and provides all the appointments to be found in the highest grade of houses. The hall is at the front, and opening from it is the living-room and the dining-room, which has communication with the kitchen through the butler's pantry. The hall has a white painted trim, with walls covered with a two-tone striped mustard-yellow wall-paper. The simple staircase has a white-painted balustrade with mahogany rail and treads.

The living-room ceiling is low-studded and affords ample opportunity for the artistic hanging of pictures. The trim is painted an ivory white, which harmonizes with the soft green wall-paper, that has a striped design of a darker shade running perpendicularly from the floor to the ceiling. The open fireplace has a brick hearth and facings, and a Colonial mantel of good design. Bookcases are built in at either side of the fireplace. The circular bay-window, built out at the corner of the room, is provided with a window-seat extending around it. The dining-room, which connects with the living-room, has a white-painted trim. Its walls are covered with a two-toned green striped paper. The open fireplace has a red brick hearth and a Colonial mantel.

The butler's pantry is fitted with a sink and dressers complete. A door opens from the pantry to the kitchen, which is fitted with a range, dresser, sink, and a large store pantry. There is also a large outside entry containing the stairs to the outside and the cellar, and an outside entry large enough to provide space for the ice-box.

The second floor is divided into sleeping-rooms. These are four in number, each being decorated in one single color-tone. The trim throughout this floor is painted ivory white. One of the guest rooms has a blue and white striped wall-paper, while another has a two-tone yellow paper. The owner's room has a flowered design of American beauty roses on a white ground. The bathroom has white enameled walls and ceiling, and is furnished with porcelain fixtures and exposed plumbing.

The third floor contains two bedrooms for the servants, one extra guest-room and a trunk-room. The cellar contains all the necessary fixtures for a well-regulated house, including a furnace-room, fuel-room and laundry. Mr. William A. Bates, of New York, was the architect.

Mr. Alfred Rogers' house at Milton, Massachusetts, is an interesting one for the reason that it is constructed on square lines, with its walls of stucco sufficiently pierced by quaint and attractive windows to give it the low elongated effect desired by the architects, Messrs. Coolidge and Carlson, of Boston.

Fig. 3—The dining-room in Mr. Watt's house

Fig. 4—The hall in Mr. Watt's house

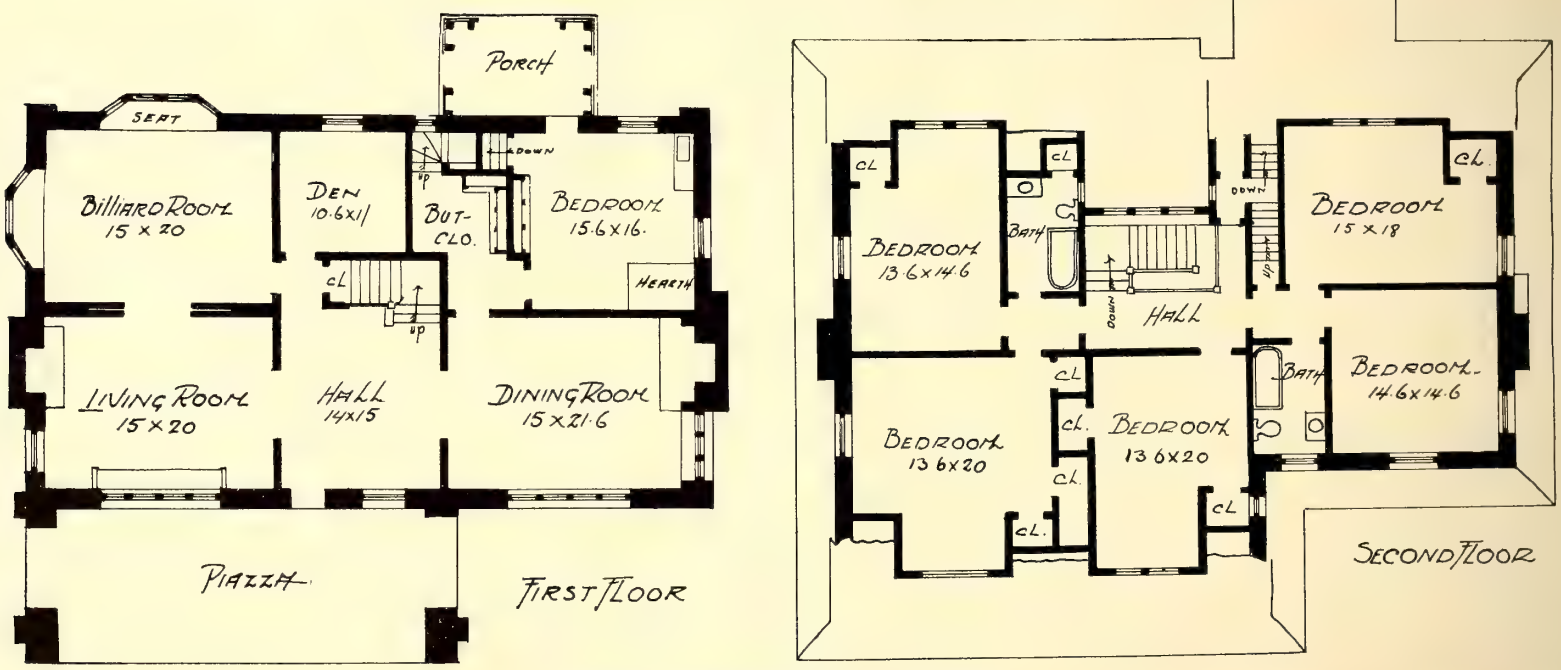


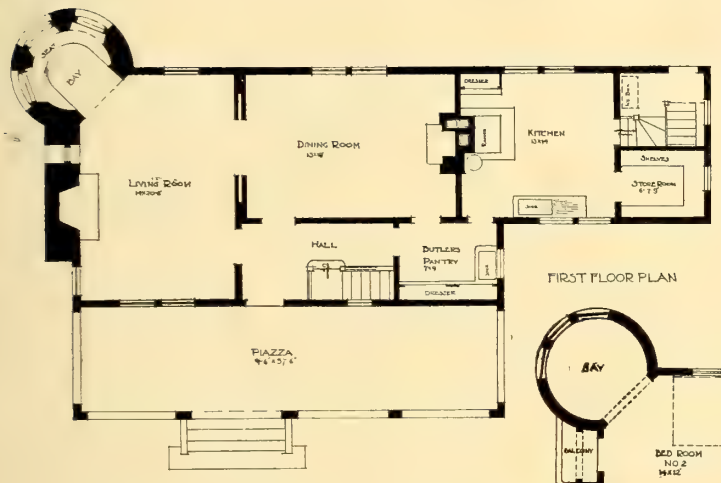
Fig. 5—Floor plans of Mr. Watt's house

Fig. 6—The hall in Mr. Ward's house is white

Fig. 7—The living-room in Mr. Ward's house

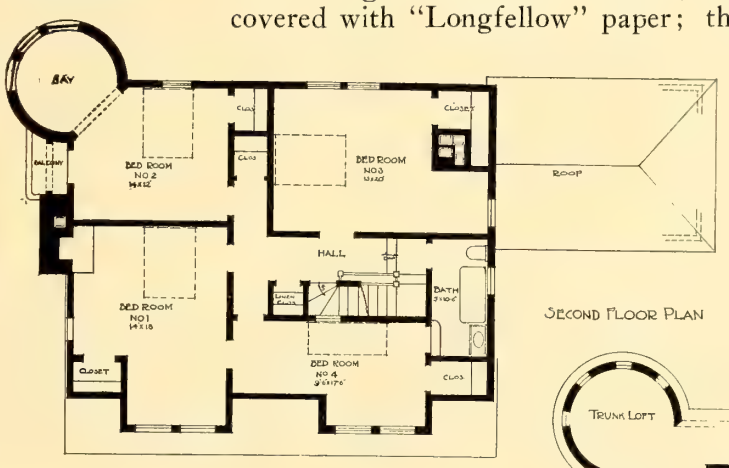
Fig. 8—The stone chimney of the Ward house

Fig. 9—A fine setting of trees



The house is kept quite close to the ground, and has a stone foundation and underpinning. The exterior walls are of frame construction and are covered with lath which are given three coats of stucco finishing, with a pebble dash. This finished coat is tinted a grayish yellow, the trim is painted an apple green, the sash ivory white, and the blinds bottle-green. The roof is covered with Spanish tile of a brilliant hue, enhancing the artistic values of the house below. The covered entrance porch is the feature of the front.

Upon crossing the threshold, one enters the lobby which is provided with a mosaic tiled floor, and a paneled wainscoting. From the lobby a door opens into the hall which is trimmed with white pine treated with white enamel paint. A four-foot paneled wainscoting extends around the hall, above which the walls are covered with "Longfellow" paper; the whole being finished with a massive wooden cornice. The stairs are separated from the hall by a screen, composed of paneled work, balusters and columns. From the main landing, from which the stairs ascend, is a door which opens into the lavatory on the



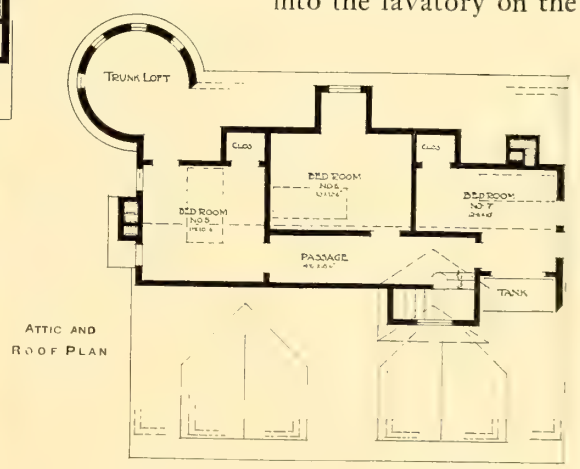


Fig. 10—The plans of Mr. Ward's house

Fig. 11—The dining-room in Mr. Ward's house

first floor. The hall is furnished with antique furniture of the Colonial period. The small reception-room, which occupies the front part of the hall, and is separated by an archway, has a similar wall decoration as the hall and is furnished with an old tea-table and some Sheraton pieces of good style.

The living-room occupies the southern side of the house, extending from the front to the rear. The walls have a low Colonial wainscoting, above which they are covered with a grassy-green wall-covering; and the whole is finished with a massive wooden cornice heavily dentaled. The open fire-

Fig, 12—The old style hall

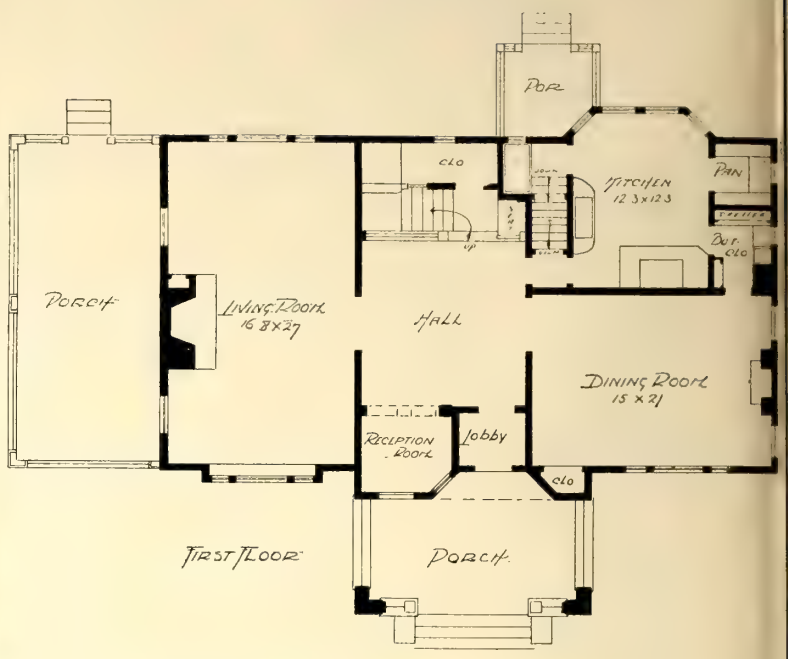


Fig. 13—The first-floor plan of the Rogers' house

place, with tiled hearth and facings and finished with a Colonial mantel of excellent design and surrounded by a massive paneled over-mantel, is quite the feature of the room.

Directly opposite the living-room and across the hall, is the dining-room which is trimmed with mahogany. It has a paneled wainscoting and a wooden cornice between which the walls are covered with a forest decorative paper, showing trees, etc. An open fireplace with tile facings and hearth has a mantel with a china closet over, forming the important characteristic of the room.

A door opens into the butler's closet, which is well-fitted up, and a second door opens into the kitchen. The kitchen is trimmed with yellow pine and is finished with hard oil, and is provided with all the best modern conveniences. One door leads to a lobby large enough to contain an ice-box, and from which access is obtained to the porch, while another door opens into the front hall.

The second floor is trimmed with white pine and is treated with ivory-white paint. The walls of each room are decorated in one distinctive style and color-scheme.

Fig. 14—The Colonial living-room

Fig. 15—Mr. Alfred Rogers

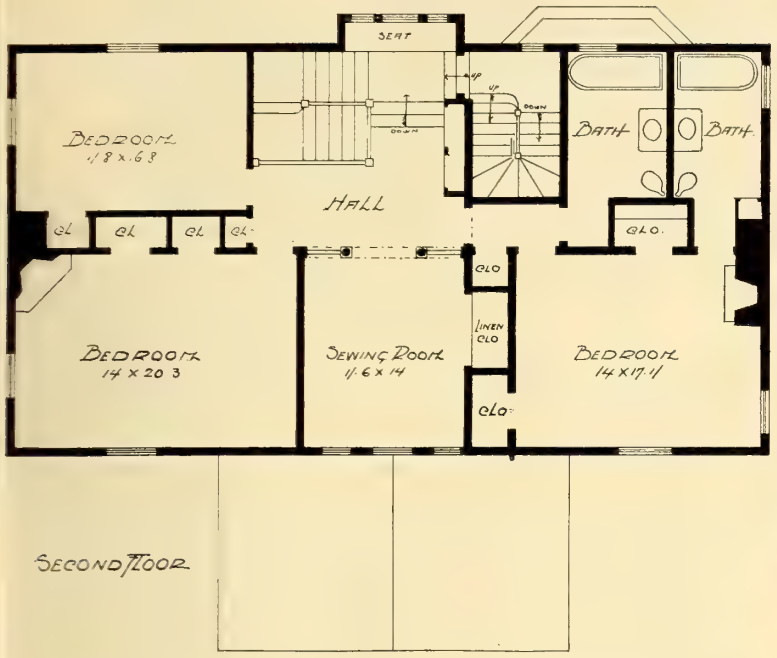


Fig. 16—The second-floor plan of the Rogers' house

Fig. 17—Reception-room with Sheraton furniture

There is a large open hall and a sewing-room separated by an archway, with columns, as well as three bedrooms and two bathrooms on this floor. The owner's room has a private bathroom and an open fireplace. The bathrooms have tiled floors and wainscoting, and they are furnished with porcelain fixtures and exposed nickelplated plumbing.

A private stairway leads to the third floor, which contains the servants' rooms and bath; besides an extra guest-room and trunk-room. The heating-apparatus, fuel-rooms, laundry and cold storage-room are placed in the cellar, which is built under the entire house. Much planting of shrubs and plants has been done about the front entrance, screening many of the hard corners.

The houses described and illustrated in this article are of good construction, well-planned, and of good architectural design. They may not, perhaps, illustrate a definite tendency in any one direction, but they unmistakably indicate, express and typify the current tendency towards excellence. They deserve attentive study and will well repay every attention that may be given to them.

ouse at Milton, Massachusetts

Fig. 18—Dining-room with forest paper in Mr. Rogers' house

Fig. 12—The old style hall

Fig. 13—The first-floor plan of the Rogers' house

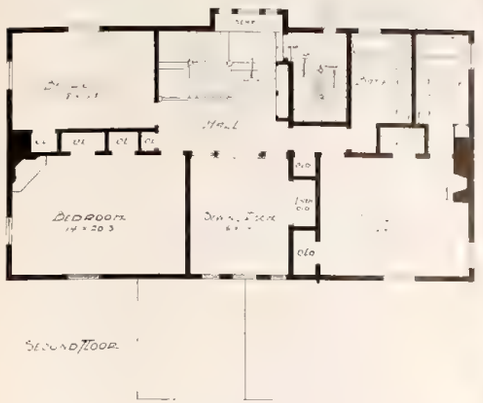


Fig. 16—The second-floor plan of the Rogers' house

Fig. 17—Reception-room with Sheraton furniture

place, with tiled hearth and facings and finished with a Colonial mantel of excellent design and surrounded by a massive paneled over-mantel, is quite the feature of the room.

Directly opposite the living-room and across the hall, is the dining-room which is trimmed with mahogany. It has a paneled wainscoting and a wooden cornice between which the walls are covered with a forest decorative paper, showing trees, etc. An open fireplace with tile facings and hearth has a mantel with a china closet over, forming the important characteristic of the room.

A door opens into the butler's closet, which is well-fitted up, and a second door opens into the kitchen. The kitchen is trimmed with yellow pine and is finished with hard oil, and is provided with all the best modern conveniences. One door leads to a lobby large enough to contain an ice-box, and from which access is obtained to the porch, while another door opens into the front hall.

The second floor is trimmed with white pine and is treated with ivory-white paint. The walls of each room are decorated in one distinctive style and color-scheme.

There is a large open hall and a sewing-room separated by an archway, with columns, as well as three bedrooms and two bathrooms on this floor. The owner's room has a private bathroom and an open fireplace. The bathrooms have tiled floors and wainscoting, and they are furnished with porcelain fixtures and exposed nickelplated plumbing.

A private stairway leads to the third floor, which contains the servants' rooms and bath; besides an extra guest-room and trunk-room. The heating-apparatus, fuel-rooms, laundry and cold storage-room are placed in the cellar, which is built under the entire house. Much planting of shrubs and plants has been done about the front entrance, screening many of the hard corners.

The houses described and illustrated in this article are of good construction, well-planned, and of good architectural design. They may not, perhaps, illustrate a definite tendency in any one direction, but they unmistakably indicate, express and typify the current tendency towards excellence. They deserve attentive study and will well repay every attention that may be given to them.

Fig. 14—The Colonial living-room

Fig. 15—Mr. Alfred Rogers' house at Milton, Massachusetts

Fig. 18—Dining-room with forest paper in Mr. Rogers' house

Furnishing the Nursery

By Edith Haviland

IN NO part of the home is there so little thought given to appropriate furnishings as in the rooms devoted to the children's use. And yet the active interest in this direction was strongly in evidence the past winter in New York City when a set of rooms with up-to-date furnishings was on exhibition. The nurseries for night and day were the chief points of attraction, holding the attention of thousands of spectators who commented audibly on the interior fittings.

The permanent influence of a child's surroundings is emphatically recognized in the kindergartens that are carried on in the true spirit of Froebel, for here one sees a provision for sunlight and fresh air, furniture of suitable size and weight, pleasing wall-colors and attractive decorations. Of much greater importance, however, is the child's own room at home where so much more of his time is spent.

Now that every phase of household art is coming to the front and receiving some measure of popular education, the claims of the nursery for intelligent treatment must be met. The essential requirements of this room need not be carried out on an elaborate expenditure, as simplicity in this room has its undoubted merits. In fact, some of the happiest achievements in nursery furnishings have been made by a clever adaptation to existing limits of money and spaces.

Of course, the ideal arrangement is a subdivision of rooms, or a children's apartment of bedroom, sitting-room, kitchenette and bath, in which each detail is as thoughtfully planned as in the larger home in which it is built. In the illustration, showing a table set before a fireplace, this idea has been carried out with great success. In the sitting-room there are cupboards within easy reaching and casements that when opened wide take in the entire outlook. The fireplace is a simple artistic design, and the mantel ornaments have been carefully chosen. The furniture is of dark oak of the Mission type made on a miniature scale. A large wool rug is laid on the floor. For the wall decorations, a wide frieze, showing Dutch children at play, is placed above the lower wall of plain crash. In the night-nursery, the bathroom and kitchenette there is the same good taste in every detail.

In the children's suite of rooms a definite color-scheme may be created by either of two methods: One is to keep the fundamental furnishings — floor-coverings, wall-hangings, woodwork and furniture—alike in all of the rooms; the other is to make each room independent but harmonious in itself. The choice of the method will naturally turn upon the conditions that are to be met.

When a night and a day nursery are to be fitted up, a sunny exposure should be allotted to the latter, if it is not possible to provide it for both rooms. If the woodwork is new, the prettiest finish is a silver-gray stain that shows the grain of the wood. Or, if paint must be employed, an ivory-white may be adopted instead of a pure white.

Rugs are now considered indispensable for hygienic living, and in the nursery that is used in the daytime only, where the little ones are much of the time playing on the floor a rug of large size is the most practical. In the night-nursery this rule is reversed, and small rugs are laid beside the bed and at the foot. As a waxed or varnished floor is difficult to wash, a new sanitary finish lately introduced from Canada may be adopted for the cleansing it endures with soap and water.

In the selection of rugs for the nursery the large rug for the one room may be thicker and warmer than those that are placed in the sleeping-room. If the right sizes can not be obtained ready-made, strips of carpet made up with or without borders may be the alternative.

There is now quite a variety of pretty rugs in small sizes in Brussels, Wilton and Axminster. Some of the heavy

A completely furnished sleeping-room

Every detail of housekeeping is carefully thought out

Adventures afield

Mother Goose frieze

The bedtime procession

The farm frieze: watching the pigs

cotton rugs that are woven by the blind are extremely tasteful in colors and border-effects. For hard wear the wool rugs made in Scotland are unequaled. The new bungalow for a nursery, but special attention is called in this article to the way in which a wide picture-frieze showing the episodes of farm-life has been adopted. As there is a set of six

Chanticleer above the door

Bed and cradle

rugs made in this country in plain colors with borders on the short ends give a wide range in substantial artistic effects.

There are numberless variations to the wall-decorations panels, there need be very little repetition of subjects, and the joining can be done with the pictures of fences. The treatment of the wall above the children's beds, the placing

The farm frieze: calling the cow home

Frieze: birds and animals of the house and farm

of Chanticleer above the doorway and two scenes showing the little girl on the fence watching the pigs and the boy calling the cows home are shown in the illustrations.

Another interesting series is that of the bedtime procession, which is especially adapted for the sleeping-room. Then there are friezes of children's toys, favorite animals and Mother Goose characters.

There is a good deal of discussion as to the proper pictures to hang in the child's room. Shall these be copies of real works of art? Pictures that are world-famous by their prominent position in art galleries? Or, shall there be simple subjects within range of the child's comprehension? My own preference would be for the latter, just as it would be to withhold the masterpieces of literature from children when their intellects are too immature to enjoy them.

When a frieze is not attached to the upper third of the wall, a picture-paper may be pasted in consecutive strips on the lower wall to a height of five feet, leaving the space above to be filled with a plain paper, or the new sanitary covering in unglazed finish.

If an entirely plain wall is preferred, some decorations are in order in colored prints, framed and hung according to the different spaces. A common mistake in hanging nursery-pictures is in putting up too many that are small in size and insignificant in detail.

Stencilling is so much in vogue at present that its adoption on nursery-walls is often inquired about. It can be successfully done by an amateur, and may be applied to a tinted wall, upon oil-paint or a plain paper. Its simplest form is as a border running under the picture-molding; or, it may be laid on in panels, according to the construction of the room.

The furniture for a nursery can now be had in small sizes in oak, mahogany, bent wood, splint seats and wicker. Only a few years ago this statement would have seemed unbelievable, yet at the present time many of our large department stores have quite a collection of children's chairs and tables.

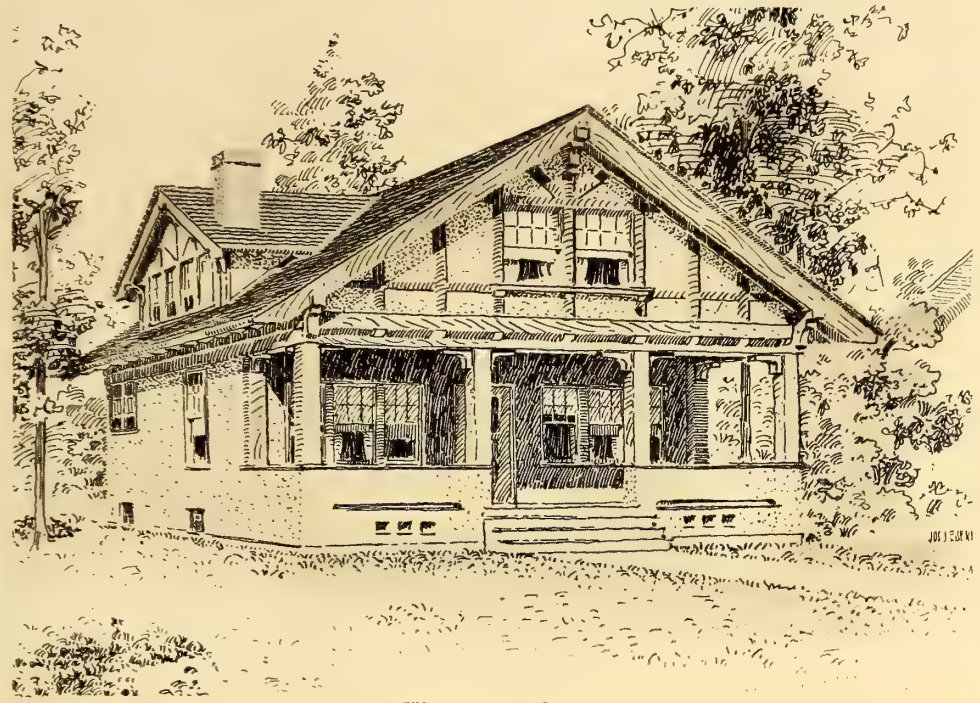
For a boy's room the Mission type with leather seats would be the most attractive, and for a girl's room something of less heavy construction.

A window-seat is always enjoyable for children who are housebound, but too often the seat is placed so high that it is not easily reached. If the board can not be lowered, some low wide steps may be added.

When bookcases, cupboards and lockers are built into the nursery, due forethought should bring them within reaching distance of the children themselves to inspire an individual care of toys and other possessions.

Some new nursery chintzes with Kate Greenway figures are attractive for bed-covers, curtains, box-coverings and screens, and in all the mirror articles for the nursery—chinaware, mantel ornaments, accessories for the toilet-table—if one is intent on keeping away from the conventional equipment for adults, there are very charming substitutes at hand.

A frieze of many creatures



The view without

A Two-story House of the Bungalow Type

This House Can Be Built at an Estimated Cost of Fifty-five hundred Dollars

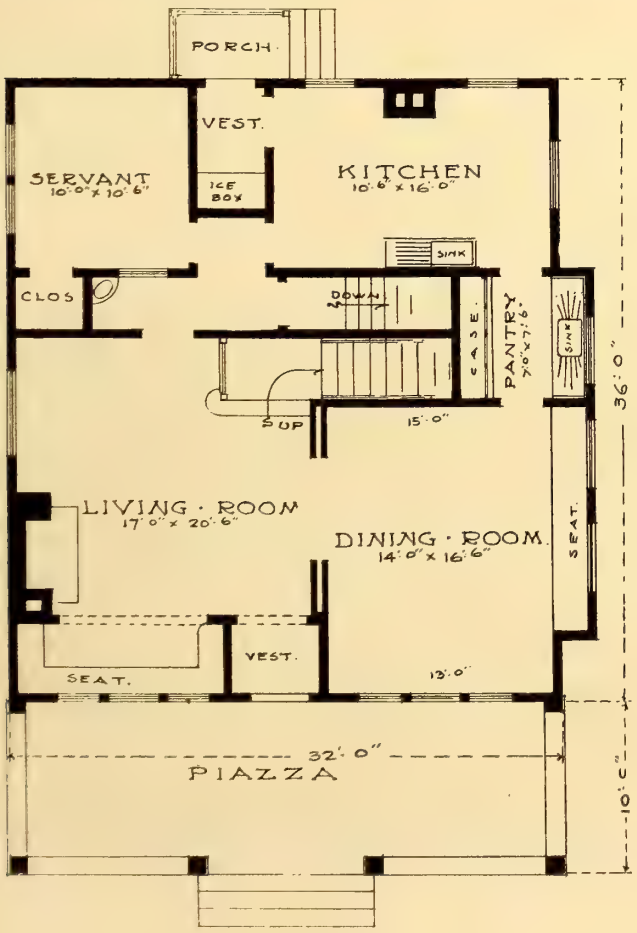
THE design presented herewith is the work of William Albert Swasey, architect, of New York. The house is in reality a two-story house, but it has the effect of the bungalow type. By running the roof over the piazza the desired low effect is obtained without in the least impairing the rooms in the second story.

The house is constructed of frame throughout, with the perpendicular walls stripped and covered with metal lath and cement plastering, the finishing coat being floated with cement and coarse white gravel.

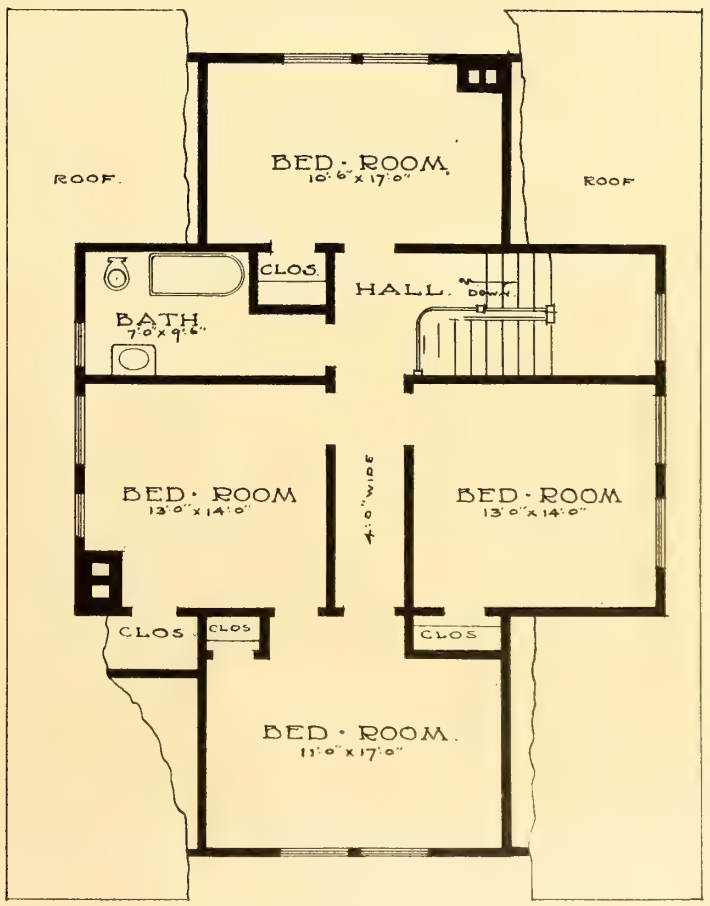
All the exposed rafter ends are left in the sawed lumber, and stained a very dark brown. The roofs are covered with shingles dipped in a moss green stain. The piazza ceiling is plastered and the floor stained same as the other exterior woodwork.

The principal rooms of the first floor are finished in birch, stained as desired, to represent dark oak, mahogany or walnut. The kitchen, pantries and servants' rooms are finished in the natural yellow pine. The second-story bedrooms have enameled white finish with birch doors stained mahogany. The bathroom floor is covered with interlocking rubber tile, and the walls are wainscoted five feet high with cream glazed vitrified tile with sanitary cap and base. The basement has laundry, servants' toilet and hot-water heater with ample capacity to heat all parts of the house through direct radiation in the coldest weather.

The estimated cost of this house is $5,500. The actual cost might vary slightly in different localities.



First floor plan



Second floor plan

Floral Clocks

By Charles A. Brassler

IN THE constant quest for "something new" that animates the spirit of the times, something novel, not only in attractiveness but in utility, something, for instance, that would prove a unique and interesting addition to the picturesque features of a private garden, a public park or other outdoor place of recreation, the floral clock has been strangely overlooked. It cannot be denied, however, that these ingenious devices have of late been accorded more attention. At the Louisiana Purchase Exposition an immense floral clock was one of the attractions, and at the Industrial Exposition, held a short time ago at Mülhausen, Thuringia, a floral clock receive considerable attention.

In speaking of floral clocks, I do not wish to be understood as referring to the ingenious combinations of flowers, opening and closing regularly at different hours, such as Linnæus, the famous botanist, devised and described, instructive and original though they may be. One of this type, especially, based on the opening and closing of flowers at uniform and predetermined periods, although differing in detail from the flower-clock of Linnæus, was sufficiently original to merit a place in any garden. It was designed, in the form of a sun-dial, by a Miss Billings, an English lady, and constructed to represent the scriptural allegory of the angel, as the reaper of human destiny (St. Matthew xiii, 39). It was constructed in the form of a gnomon, the angel's wing casting the indicative shadow on the dial-plate. The dial is mounted on a pedestal in the center of a parterre of flowers, so laid out that the sickle throws its shadow on the one that, acording to Linnæus, as recorded in his "Botanical Philosophy," corresponds, in its opening and closing, to a certain time of day.

The same flowers are also carved in bas-relief around the base of the pedestal, so as to represent them at seasons when the flowers themselves are not in bloom. To read the hours, even by so simplified a floral timepiece, requires a more perfect knowledge of the habits of plants than most people, not erudite botanists, possess; so, for the benefit of those whose botanical knowledge is limited, in the floral time-keeper, above described, a dial-plate, inscribed with ordinary figures, is placed under the point of the wing, the edge of which acts as a gnomon.

While such a device for recording time would interest any intelligent person and could be made an attractive feature of outdoor decoration, I desire particularly to refer to the floral clock in its more practical sense, in which horological skill is combined with highly developed horticultural taste and knowledge.

As might be expected, it is in Switzerland, where the clockmakers' art is of ancient repute and has attained its highest perfection, that some of the finest specimens of floral clocks are to be found. As among the most interesting, artistic and practical, I have, therefore, included, among those selected for illustration, the floral clocks in the park of the Kursaal, and of the Savoy Hotel, at Interlaken. There is also a beautiful one in the garden of Medaks Café de la Terrasse, at Zurich, and one at the Grand Hôtel des Avants, Switzerland. Several of these clocks were designed by M. Guélat, conservator of the Schwab Museum in Bienne, who has also installed, on the lawn in front of that institution, a floral clock that is a source of never-failing interest to residents in and visitors to that city.

The dial of his clock, laid out at an angle of 40 degrees, so as to be more readily visible, is one and one-half meters (4 feet 11 inches) in diameter and is composed of living flowering and leaf-plants, of the varieties used in carpet-bedding, and arranged, as to color, so as to produce an attractive design, the Roman numerals, the figures on the seconds, dial and the year, 1906, being worked out in different plants. The three hands are made of aluminum, record seconds, minutes and hours and, owing to their large proportions and speed, their movement is so perceptible as to attract attention.

The movement, operated by a spring, is contained in a water-tight metallic case, concealed beneath the floral dial so skilfully that even the opening (between the figures III and IV) where the crank-handle for winding the clock is inserted and the regulator, which projects from the face, are invisible. The arbors carrying the hands work in water-tight, lubricated stuffing-boxes.

Additional interest is imparted to the clock by its reproduction, with the aid of moving figures, of various tableaux.

The gigantic floral clock of the Louisiana Purchase Exposition

Floral clock of the Schwab Museum, Bienne, Switzerland

Four times daily, in a grotto above the clock, appropriately framed in blossoms and verdure, groups representing various epochs—the cave-dwellers, the lake-dwellers, the Helvetians, the early Christians, the people of the Middle Ages and later periods—make their appearance, presenting a moving chronicle of the progressive development of the human race.

One of the first and most successful of this type of floral clock on record was the one installed in 1892, in the garden of the Trocadero, Paris, and which, sunk below the surface of the ground, to afford a better view of its dial, was the subject of much attention and wonderment at the time. The dial, 32 feet, 2 inches in diameter, with the floral hands, was designed and laid out by M. Debert, gardener and florist; the mechanical details were planned by M. Casalonga and carried out by M. Mathieux; M. Marcel, landscape architect, designed the attractive setting. A small jet of water, acting on floats, operated the concealed train of wheels by which the hands were removed. The mode of operation enhanced the novelty and interest of the clock.

Edinburgh, the chief city of Scotland, and by natural location and artificial embellishment, one of the most beautiful of Europe's modern capitals, boasts an exceptionally beautiful floral clock that has been laid out every summer for several years past in the Princes Street gardens and of which an illustration is presented. The dial, measuring twelve feet across, is laid out on the sloping surface of a sort of mansard, hollow inside, but covered externally with green turf, against which the dial, a most beautiful specimen of carpet bedding, shows up admirably, American Aloe, Echeveria, Sedum and similar plants being tastefully combined in its construction. The figures, of fresh green pyrethrum, stand out clearly betweeen two concentric rings of silver-gray sedum. Not only the dial, but the hands of this clock are florally worked out, being long, shallow troughs of sheet-metal containing the earth in which suitable plants grow. Sedum and echeveria are the growths commonly used, and make a handsome appearance, the minute-hand having a total length of eight feet. Considerable ingenuity had to be displayed in balancing the hands, owing to the fact that the clock is laid out on a slope of about 40 degrees, the amount of moisture the soil and plants carried also causing the weight to vary widely. The works, an ordinary tower movement, are located in the base of the adjacent Ramsay statue, driving-rods and suitable gears of non-corrosive metal, running in boxes kept filled with oil to prevent rust, transmitting the movement to the hands.

Public interest in this remarkable time-piece has recently been stimulated by the addition of a simple train of wheelworks combined with a bellows and two organ pipes, concealed in the floral dial, with the aid of which the clock is made to sound a cuckoo note at each quarter and at the hour.

It is not necessary, however, to travel to foreign countries in search of notable specimens of floral clocks. A timepiece of this character forms one of the attractions of the water-works Park at Detroit, Mich., and is illustrated herewith. It is of unique design, the dial being vertical and operated by a jet of water; as long as the water-supply continues the clock goes and never needs winding. It stands on a broad green base, the dial, about six feet in diameter, being composed of foliage and flowers in artistically contrasting shades, rows of white flowers being used to indicate the

Floral clock at Edinburgh, Scotland

minutes. It is said that the plants require trimming almost daily, so that the dial will remain clear and the figures be legible at a considerable distance. The hands, of wood painted white, are attached to the movement in a manner similar to the hands of an ordinary clock.

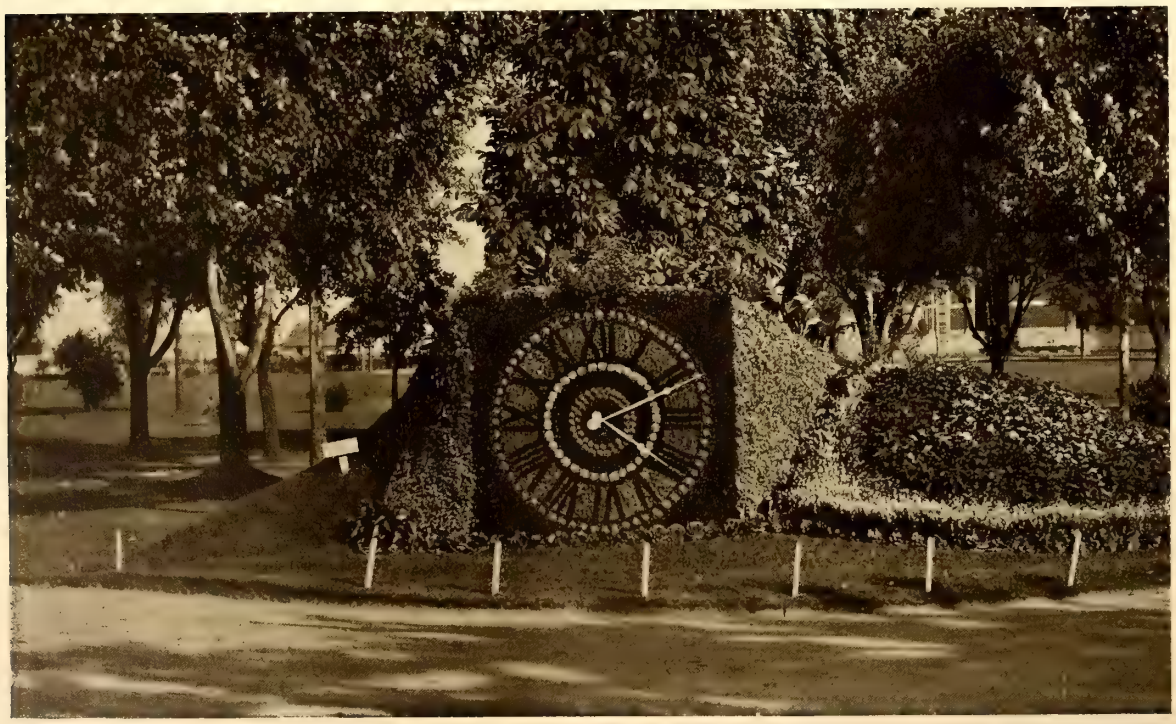
Another American floral clock that was accorded a great deal of attention was the colossal time-piece laid out on the slope of Agricultural Hill in front of the Palace of Agriculture, at the Louisiana Purchase Exposition. In magnitude, this gigantic clock surpassed everything previously attempted in this line, the dial being 120 feet in diameter, with numerals 15 feet in length. The hands each weighed in the neighborhood of 25,000 pounds, the minute hand being 74 feet in length and travelling at a speed that would cause it to cover a distance of more than 500 miles in a year.

Floral clock of the Savoy hotel, Interlaken, Switzerland

The dial, probably the most elaborate and extensive decorative production of a floral character ever attempted, contained upwards of 18,000 growing plants. The center was planted with 4,500 verbenas, surrounded by a border containing 1,000 Coleus Verschfeltii. The numerals, from 1 to 12, required 2,500 plants of Coleus Hero, while the space surrounding them contained 3,000 Centaura Gynocorpa, with 4,000 Centaurea Martinia Candidissima. In the yellow minute marks 1,500 Coleus Golden Bedder were used, the red minute marks using up 1,500 Coleus Verschfeltii.

The dial was made, as a special exhibit, by the St. Louis Seed Co., and earned for them a gold medal. The mechanism of the clock was constructed by the Johnson Service Co., Milwaukee, Wis., the movement being contained in a small building located between the clock and the Palace of Agriculture. It was Grecian in design, except the roof, which was hemispherical and of cerulean blue, dotted with stars and showing the meridian lines, to represent the celestial arch. The southern wall of the little structure was of glass, screened by a revolving door which slid aside every hour, allowing a view of the works. Adjacent to this building stood a kindred structure, the roof of which represented the western terrestrial hemisphere, in which was housed a sonorous bell weighing about 5,000 pounds, the strokes of which, as they recorded the flight of the hours, could be heard all over the exposition grounds. On the other side of the clock house was a structure similar to the bell house, in which was housed an immense hour-glass that was reversed hourly by automatic machinery. This clock kept accurate time without a hitch all the time the fair was open. At night the dial was illuminated by electric lights.

Such floral clocks as I have described, the first expense of the works once met, cost but little more for installation, and require hardly any more subsequent attention than is needed to keep an equally attractive laid out carpet bed in order. Periodical oiling and regular winding is all that the mechanism, if skilfully and honestly constructed to begin with, calls for; the floral part of the work is only such as a competent gardener would be expected to undertake in connection with his duties in any well-kept public or private grounds, and its maintenance would be a source of gratification to the horticulturist having a thorough knowledge of and pride in his calling.



Floral clock in the Water Works Park at Detroit

Such clocks are only suited to large places, as public parks and squares. Even with the most skilful they will entail great cost and are hardly, by their size and effect, available for the decoration of private places.

Cobwebs

By Carine Cadby

IT IS only if we get up early that we see cobwebs in their full beauty. We must be up betimes if we mean to catch these silvery webs while their gossamer is still intact and their delicate designs not yet spoiled by the little wind that is sure to spring up when once the day has come. We must be weather-wise, too, if our heroism of early rising in wintry weather is to meet with its reward, and we can tell a little over night, for a still dampish evening usually means a still, misty morning. The beauty and visibility of the cobwebs so depend on atmospheric conditions, and unless there is the cold dampness in the air there will not be the rows of minute silvery bells on the cobwebs which emphasizes and make the strands visible and which are in reality infinitesimal drops of moisture.

The webs are so fascinating in their early unspoiled beauty, for no two are alike. Each has had its own architect, who seems to have made a special study of his own particular conditions and most cunningly used every natural advantage that came in his way. Then there are the distinct different kinds, two very obvious ones seen in any garden are the ones that remind us of tatted doilies, a circle, or portion of a circle with lines radiating called the Orbitilariæ. Another, the thin closely woven sheet of web suspended among branches, called the Relitelariæ, which must take a lot of spinning.

Our old childish idea of the spider spinning his one thread is rather knocked on the head when we learn about the silk glands, and how the silk issues from many papillæ and is united into one strong thread. The hinder legs of the spider have this work to do, and if we watch when the spinning is going on, we shall see how busy they are, but it is the third claw in particular that is used for this purpose of arranging the web and uniting the different lines into one thread. It has been noticed that those spiders which spin the most exquisite webs (Eperides) have this claw very much developed, and in those spiders who hunt their prey instead of spinning snares this leg is entirely absent.

Sometimes, too, as children, we have wound the strands of a web and wondered if something could not be made of such beautiful fine silken thread. About one hundred and sixty years ago a Frenchman named Le Bon had the same idea and actually succeeded in weaving stockings and gloves from it, but no cultivation of spiders for this purpose has ever succeeded, though it has once or twice been tried, because the spider itself is such a voracious and cannibalistic creature.

Altogether the spider itself is not an attractive character, and even his beautiful web loses a little of our admiration when we realize it is, after all, nothing but a cunningly woven snare. In it sits a cruel and relentless beast of prey, waiting to see its victim entangled and ready to dart out, bind him with fresh ropes and devour him. Also, its domestic traits do not show it in a much better light. In the courting season, unless the male spider be as big and as strong as the female, there will always be a tragic fate hanging over his head. If he fail in any way to please his exacting mistress, she very quickly and effectually disposes of him by eating him up! And, as in nearly all the species of

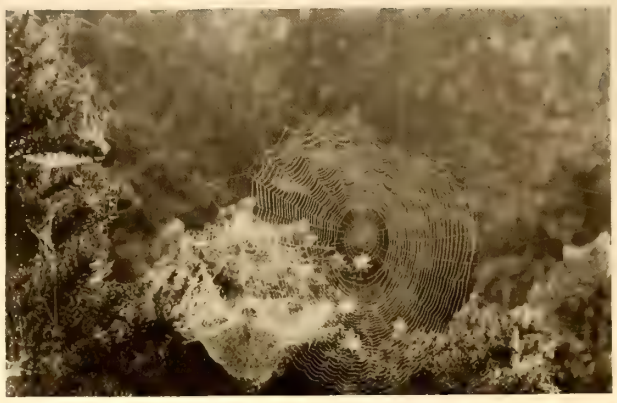
Beautiful but frail

A flower of the mist

Heavy with dew

spiders the male is inferior to the female in strength and size, one shudders to think how often this gruesome domestic drama is acted. There is, however, one ray of hope for the poor male, he is more active and more agile than her he woos, so let us trust he sometimes puts discretion before chivalry and does not scorn to run away!

In her motherly instincts, too, the spider is anything but old-fashioned. She does not allow her young to be much trouble. In the case of the garden spider (Araneus), the eggs are laid in a cocoon, which is suspended somewhere near her web and about which she troubles no more However, one must own that most spiders are a little more concerned for their offspring and carry them about on their backs till they are big enough to fend for themselves.



The first gleams of the sun

A fairy's hammock

We have sometimes wondered what the strands of gossamer are that float down onto our noses from apparently nowhere, and have sometimes wondered if they were spun by some particular species of spider that did not trouble to form them into a web. Sometimes the air is full of them and we see them lying, like a white film, on bushes and trees. We learn, however, it is a youthful sport of young spiders of different species. On fine autumn mornings they climb to the tops of fences and bushes and emit a thread or tuft of threads which soon become strong enough to bear them, and on which they sit and let the wind carry them to great heights. Lucky young spiders! How we envy them their youthful sport. Would that we too could manufacture a flying machine so easily and inexpensively, how gaily would we float off to great heights on fine autumn mornings!

After all, the worst has some redeeming trait, and with the spider it is certainly his gift of spinning and the beauty of his webs will help us not to judge him too harshly.

Not a few learned scientists have given years of their lives to the scientific study of spiders, and have produced weighty tomes embodying the results of their researches. To the scientist, of course, the spider has scientific value, as has many another uninteresting creature and natural phenomenon; but the housewife has not yet been trained to learn of their domestic efficiency nor to appreciate their housely advantages. Perhaps this state of affairs may never be brought about; but it is most unwise to announce results in the world of science, for very many times what seemed definite conclusions have been swept to one side by some brilliant discovery or some unexpected conclusion.

I have not, however, thought to write of the scientific aspects of the spider, but simply to draw attention to the real beauty of many of his webs. These are often more than charming and more than ingenious. The student of Nature may well pause for a moment in his scientific studies, and enjoy, if he can, the ethereal but real beauty of these wonderful nature-creations. It will be time well spent and thoroughly enjoyable.

The veil of the morning

The web of the garden spider

A web still wet with dew

Carrots as a House Decoration

By S. Leonard Bastin

AT FIRST sight it must be admitted that there does not appear to be anything which is decorative about the homely carrot. However, with a little care it is possible to convert any number of roots into really attractive objects, which will be especially welcome to those who make a pastime of the indoor garden. All that is necessary to carry out the plan indicated below, is to obtain some well-developed carrots, stumps which are rather old answering the purpose best.

The carrots should be scrubbed quite clean with a small brush in the first place. Then take a sharp knife, and with a clean cut, sever the root in such a way that the cleavage is made about two inches from the crown or upper part of the carrots. The tapering ends will be of no further service and may be thrown away. The next step is to hollow out the interior of the portions that are retained. This is perhaps most easily accomplished with the end of a rather blunt knife; holding the stump firmly in one hand while the tip of the implement is turned round and round. It is well to leave a good thickness between the interior of the carrot and the outside, and also to avoid boring too deeply toward the crown. A great deal of the success of the experiment depends upon leaving a good amount of root at that which has been the top of the carrot. As well great care must be taken to avoid making a hole right through in any part of the stump, as in this case the portion will be quite useless.

The root prepared for budding

When all the stumps have been hollowed out as indicated, steps may be taken to prepare the carrots in such a way that they may be suspended. In the first place, with a bradawl, or any sharply pointed instrument, pierce four holes in each portion. These should go right through from the outside to the inside, and be about a quarter of an inch from the cut end as shown in the illustration. The holes should be exactly at the four "corners"—if one may use the word in connection with an article which is nearly circular. A good deal depends upon arranging that each perforation is as nearly opposite to its fellow as possible. Now obtain some string which is rather thin, but such as will not rot easily if it is kept continuously wet. Cut a number of pieces of this about fifteen inches in length, allowing two portions for every carrot. Each of these lengths is to be threaded through two of the holes in every root. It will probably not be very easy to do this by forcing the twine through the holes, and the best way by far is to get a large needle—carrying the string through the openings being a simple matter in this manner. When each carrot is threaded the pieces of string should be pulled out so that they all meet quite evenly, and then they may be tied together firmly into a knot. If this has not already been done, any portion of the foliage which may be attached to the carrots should be removed.

Boring the holes in the carrot

It is now necessary to find some light position where the stumps may be hung up, the crowns being of course downward. Perhaps the best place is in front of a window where there will be plenty of illumination. A little ingenuity will be needed in order to devise some arrangement whereby the carrots may be suspended in a good situation. Any place actually on the framework of the window will probably be too near the glass and it will be undesirable to damage the woodwork with the driving in of pins or nails. A little temporary shelf may be improvised supported on two piles of books or boxes, and from this the carrots may be suspended, a tack or anything that will keep them in place answering the purpose admirably. The next thing to do now will be to fill each portion of carrot with clean water. The following day it is likely that the root will have absorbed nearly all the moisture, and the carrot must be filled up again and kept well supplied all along. The water must always be sweet and pure, and in order to keep it so, it is a good plan to place in each root a tiny lump of charcoal.

Of course, a good deal depends upon the temperature of the apartment, but if the room is reasonably warm it will not be very long before a number of shoots are to be observed coming from the crown of the carrots. This will naturally tend to grow out towards the light, and if this were allowed to take place, the result would be a one-sided affair which will be very far from attractive. The best way in which to get over the difficulty is to

The newly grown carrot

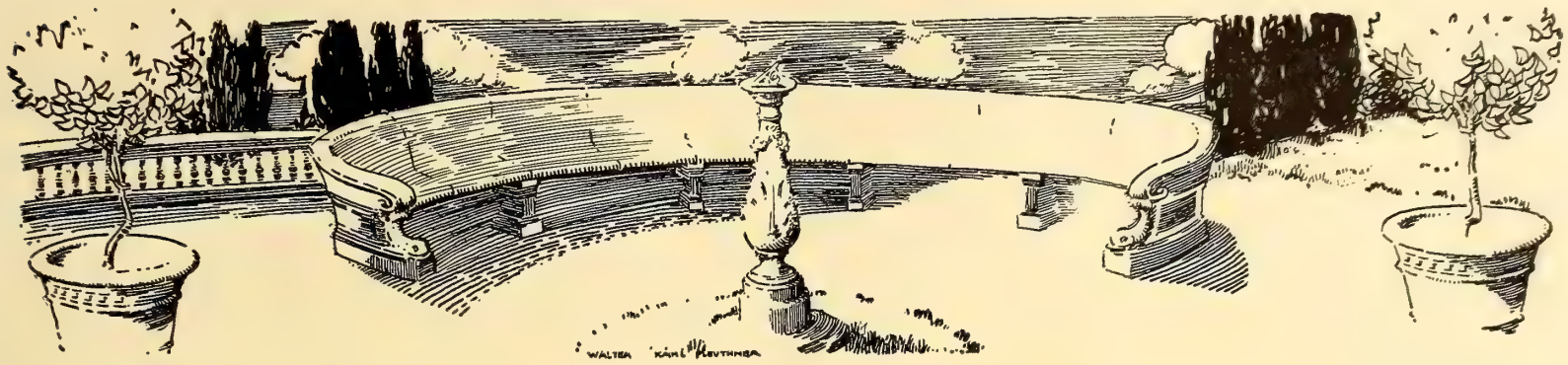
Scooping out the carrot

change the position of the carrot every day, first turning it one side to the light and then the other, so that an even development is encouraged on every part of the stump. In about a fortnight the portion of the carrot will have been converted into an object of great beauty. From the crowns in each case long shoots of the well-known fern-like foliage will extend upwards, and any person who was not in the secret would be puzzled to say just how these really attractive growths had been formed. If careful attention is given to the matter of watering, there is no reason why the sprouting carrots should not last for quite a long while, and when once the leaves are well developed the stumps may be removed from the windows, and suspended in any part of the room where they will look most decorative. An occasional sprinkling of water on the foliage will be found to keep things in a nice fresh condition.

Do not, however, make the very common mistake, of too plentifully supplying your house with growing carrots. Interesting and beautiful as these roots are when grown in the way I have described, it would be a serious mistake to start too many of them and have them, let us suppose, depending from every window. They are easy to arrange, easy to start, and no trouble at all to take care of, and the temptation to have many of them may often be too great to be resisted. But let me advice that this desire be heartily suppressed. Suspended carrots may well have their place in the winter decoration of the house, and they may be keenly appreciated and hugely enjoyed, for they are undoubtedly beautiful; but a few carrots will go a long way in most households, and a few will be found more satisfactory in the end than many because of their novelty. A carrot at every window immediately loses its interest quality of novelty and much of its beauty will be lost through its very multiplicity.

People often make a serious mistake in choosing too many plants of one kind, or of related kinds, for house decoration. The space at one's disposal is apt to be, on the whole, very limited. It is better by far to have a choice variety than to have a number of plants of one kind. There is an immense interest in a well-developed window garden, but its interest is heightened by the variety of its contents. There is a very considerable variety of plants to select for such growing, and the interest of the little indoor flower-space will be greatly heightened by putting in as many different kinds as possible, giving them all the attention they deserve, and watching their varied growths and habits. The variety of bloom helps, also, and is an important feature in the pleasure to be derived from these charming household pets —for pets they are, even if inanimate and silent.

The carrot as a household decoration is almost unknown. Few have thought of it for this purpose, and I am persuaded that few know of the manner of growth I have described and illustrated in this brief article. 'Tis, indeed, but a comparatively unimportant thing, a cheap plant, plucked, as it were, from the family market-basket. But it is still a thing of beauty, a decoration to be prized and enjoyed, and so I most heartily commend it to the plant-lover.



Garden Notes

Window Plants

A HOUSE without a sunny window full of plants is a dreary place in the winter time!

If the sunny window is there the plants are easy to manage, for nothing is simpler than growing geraniums, for example, in the house. They are always beautiful, and they are so satisfactory because of their cheerful disposition. They bloom constantly and never look poorly unless they are injured by frost.

Small plants can be bought of florists, or slips from old plants can be taken and rooted in sand, a process that takes not longer than two to three weeks. This should be done at once, so that they will be ready to bring in the house when cold weather comes.

Calla lilies are very handsome in foliage and flower. They grow without much difficulty, though they may be shy bloomers.

Amaryllis is a bulb of the simplest culture producing two or three stalks with a cluster of flowers at the end which go through the range of yellow-reds.

Azaleas are beautiful while they are in bloom, but they can not be grown satisfactorily in the house. They must be brought into bloom in a greenhouse, and after flowering they should go back there to recuperate for the next season.

Begonias with their large glossy leaves and delicate flowers are indispensable in the window-garden. The Rex begonias are striking in leaf, and the Lorraine begonias have beautiful blossoms.

The Paris Daisy, or Marguerite, is easily grown and is very pleasing at first, but becomes scraggly and tiresome.

Chinese primroses are continuous bloomers and are very delicate and pretty. *Primula abconica* has fine hairs on the leaves which irritate delicate skins.

Cydamen is one of the best window plants. It is always in bloom and its graceful red or white flowers and streaked leaves never loose their charm.

Nasturtiums are good, though a little harder to grow than some other things.

Asparagus is a feathery-leaved vine that looks well growing at the side of the window.

English ivy is a little too waxy and artificial looking for windows.

Lobelia Erinus, the small blue lobelia, can be taken from the garden and, planted in a low dish, will bloom all winter.

Oxalis, with pink flowers and leaves like clover, is good in any window.

Petunias, cut before frost, will grow in water like the Wandering Jew, and will bloom as if they never knew what earth was.

Basket Plants

Anything can be grown in a basket if one likes, but the favorite things are those which droop and trail. Most ferns are good in baskets, and of the vines the following are the best:

Senecio scandens. Moneywort, Vinca major,
Kenilworth ivy, Nepeta,

Tin Cans as Pots

Tin cans are better in the house than earthen pots, because the moisture does not evaporate from them as rapidly as it does from the pots. Tomato cans or condensed milk cans with a few holes punched in the bottom for drainage will be large enough for most plants. The cans can be painted or they can stand in a wooden window-box.

Bulbs in the House

In addition to the bulbs mentioned last month for outdoor planting, many of which can be grown in the house, there are a number of tender bulbs which are very desirable in the window-garden.

The polyanthus Narcissus (*N. tacetta*) in many varieties, *N. Bulbocodium Clusii,* paper white and the Chinese sacred lilies are all good tender kinds that can be grown in the window-garden. Other narcissi can be grown just as well except *N. poeticus,* of which the variety *ornatus* is the only one that can be forced.

Freesias are good and not difficult to manage. They now come in a variety of colors, including rosy violet, bright orange-yellow, rosy carmine and pale lavender mauve. These new colors are expensive, however, as the bulbs cost from $7 to $30 per ten.

Of tulips the single early varieties are the best.

Of iris the Spanish and English can be flowered in the house, though not very early in the spring. *Iris alata,* a tender variety, is said to be very good in the house.

All these bulbs should be planted in flat pans or boxes in October, and kept moist and dark in a cool cellar until December, when they can be brought to the light and will soon flower. After one season in the house they should be planted out in the wild garden.

A wild garden in the house with blood root, trillium, Solomon's seal, dodecatheon, snowdrops, crocuses, etc., is quite possible and might be very attractive.

Replanting the Flower Garden

October is the best month for replanting the flower-garden. Every two or three years it should be gone over, taking out unsatisfactory things, putting in new ones, dividing the clumps which are too large, and in general giving it a thorough overhauling.

Peonies should never be moved, but Phlox will need dividing and replanting. The irises may be too crowded, and the hollyhocks and foxglove may need replacing.

Lilies may die out and some of the coarser things like rudbeckia may take too much room.

The overhauling gives one an opportunity to work in manure and to plant many bulbs, such as lilies and bulbous iris.

Asparagus Culture

October is a good time to plant an asparagus bed. Two-year-old plants costing about a dollar per hundred are the best that can be bought. They should be planted about 6 inches deep in a very rich and carefully prepared bed, rich and carefully prepared because an asparagus-bed is a permanent thing and improves from year to year. The common practice is to plant them in rows 4 feet apart, 2 feet in the row, but I believe the French method is better. There they plant them 5 feet apart each way. Six inches of manure is spread on the bed in the fall as a mulch. The new shoots come up through that, and it is not spaded in until the cutting-season is over.

No cutting should be done on an asparagus-bed until it is two years old.

All weeds should be kept out, and it must be remembered that seedling asparagus plants are the worst of all weeds to have in an asparagus-bed.

CORRESPONDENCE

The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

By Alice M. Kellogg

Author of "Home Furnishing: Practical and Artistic"

UTILIZING WICKER FURNITURE

"MY PROBLEM this month belongs with the changes that moving day brings to the home-maker. In our new house we have one less sitting-room, with, therefore, some extra pieces of wicker furniture to place somewhere. These are stained in a light green, as they were formerly used in a small parlor. Now with our one large living-room furnished with mahogany and upholstered furniture the green willow does not fit. Yet we need more chairs in this room. Can you help us to utilize these pieces by some suggestion?"—T. R. F., South Carolina.

If the willow chairs are of a good pattern and well made they will answer very well in the new living-room if they are restained or painted a dull mahogany, and the cushions on the seats re-covered to go with the general tone of the room. This point is generally determined by the wall covering, as the furniture shows against it, but the color of the floor covering is also important. If the walls are of buff color, the covering for the chairs could be a golden brown velvet, with the frames stained mahogany red. If the rug or carpet shows much green, then the covering could be in green or a green and gold. The wicker furniture need not be abandoned, as it is capable of a good many adaptations to its environment.

A LONG NARROW PARLOR

"C. N.," of Philadelphia, asks about the furnishing of a long, narrow parlor. "Our largest room is very narrow in proportion to the width—the typical city parlor with two windows at the front, a wide opening into the hall, and another wide opening into the back room, which we shall use as a dining-room instead of the basement. But how to make this room that is too light in the front and too dark at the back an agreeable sitting-place is puzzling. I would buy new rugs and furniture if I knew how to arrange them attractively."

As most city parlors are too dark, the general principle to begin on with this room is to use a light wall-paper, either buff or deep ivory, or a newer tone called champagne. As one large rug may accentuate the long, narrow lines of the floor, three rugs may be used, one for the middle of the room, and one for each end. The sizes of these rugs should suit the arrangement of the furniture, so that any break in the floor will not interfere with the legs of sofas or chairs. As the fireplace is probably opposite the hall entrance it will not be very adaptable for fireside enjoyment, but its appearance should be carefully studied so that each detail of its appointments will help to give character to the room. If there is a gas-log there should be a brass fender made of pieced work or bars. If there is, instead, a basket-grate for burning coal or wood, it should be laid ready for lighting, with a spark-arrestor at hand. The mantel ornaments will, necessarily, be of a formal type, as all personal bric-à-brac will be excluded.

A long sofa with a mahogany frame may be placed against the wall in the front part of the room, with an armchair and table opposite. The half-moon table, with a leaf that may be placed upright against the wall, is a help in furnishing a room of this kind. In the back of the parlor a round table may hold a drop light, or, if there is no connection for gas or electricity, a lamp on a tall standard may be used, and a light started in the early evening to make this portion of the room cheerful. As only general hints may be given at this distance, the home-maker will need to watch the way in which the family groups itself together and follow this natural arrangement with sofas and chairs.

CURTAINS FOR AN OFFICE

"The solving of house-furnishing problems in your magazine has attracted my attention, although I am a business man, I am compelled to attend to certain fittings in my own office from time to time. Just now my windows are in need of some kind of curtaining to subdue the light yet that will not appear too feminine for a man's place of business. The window-shade, when drawn completely down, looks gloomy; a lace curtain is obviously too fragile. Is there anything on the market that is more suitable?"—D. E. W.

If the windows in this office are like the usual ones in a large business building, they are very high and very wide. Under these conditions, the regular window-shade may be used too lighten or darken the upper sash, and a permanent screen made for the lower sash with a half curtain. The sockets for the brass rod should be fastened to the casing and not to the window itself. The new gauze that resists the action of the sun is well adapted for an office window, and there is an interesting range of colors. The selection may follow the tone of the walls of the room.

A SUBSTITUTE FOR A DROP LAMP

A correspondent who has rented a cottage in Florida for the fall and early winter months writes: "We find instead of an electric lamp in our living-room that there is only a cord with an ordinary bulb at the end. This hangs over our center-table and is very unsightly. As we shall not keep house when we leave here we do not care to purchase an electric lamp if there is any way we can fix the bulb to give us a proper light for reading and sewing by in the evening."

A light-weight shade, about twelve inches

(*Continued on page xvi*)

Garden Work About the Home

By Charles Downing Lay

SMALL SHRUBS FOR A SMALL PLACE

I THINK it is a mistake to plant shrubs which will grow very large on a small place. Even if the large shrubs are particularly beautiful, they soon make the place look overcrowded and themselves cramped. My advice to E. J. S., who has a lot 50x100 feet, is to use only small shrubs, leaving the large things for his neighbors who may have more land.

The smaller broad-leaved evergreens are the best shrubs that can be used, and now, unfortunately, they are the most expensive that one can buy.

The most notable of this group are *Rhododedron punctatum, R. hirsutum, R. ferrugineum, R. Wilsonianum, R. myrtifolum, Azalea amoena, Pieris floribunda, Leiophyllum buxifolium.*

Conifers of small size include *Juniperus communis, J. sinensis,* Retinosporas in variety, *Pinus mugho and P. cembra* and several yews.

Of the small deciduous shrubs there is a considerable variety, many of them not well known. Such are *Hypericum aureum, H. Moserianum, H. densiflorum,* all semi-evergreen shrubs about three feet high with yellow flowers in midsummer.

The blue Spiraea, *Caryopteris mastacanthus* grows higher but can easily be cut back. It has pure blue flowers late in the year and very bluish-green leaves. It is a very good thing which is not often seen.

Ceanothus Americanus is a low shrub with good foliage and button-like flowers in May. It is common along the roadside, but is seldom planted in suburban places.

Spiraea Thunbergi, Thunberg's Spiraea, is well known and desirable. It often grows four or five feet high when neglected, but is then very straggly. It should be kept under three feet.

Xanthorrhiza apiifolia, yellow root, is a native with the most beautiful foliage which turns clear yellow in the autumn. It is always under two feet high and spreads rapidly by underground stems, forming large clumps.

Dirca palustris, leather wood, with light-green foliage, inconspicuous flowers and symmetrical shape, branches like a tree and is good even in winter when the leaves are gone.

Stephanandra flexuosa has feathery foliage in great profusion and small white flowers.

Symphoricarpus racemosus, Indian currant, an unappreciated shrub with foliage perfect in color and red berries persisting after the leaves. It will grow in dense shade.

Hibiscus moscheutos, the marshmallow and peonies, both herbaceous and tree, would count as shrubs in such a scheme if used in moderation.

Azaleas, especially the Ghent and Mollis-

varieties, are lovely in color and should be freely though carefully used.

A collection of Japanese maples is always effective. They grow slowly and count as small shrubs, although some of them reach a height of fifteen to twenty feet, perhaps more, when they are charming small trees.

Deutzia Gracilis is a well-known low shrub, good in mass but not at all showy.

Daphne Mezereon and *D. Cneorum* are both good shrubs, the former deciduous and two to three feet high, and the latter evergreen and low.

Low trees to be in scale with the shrubs should be used, and these would include the dogwood, sophora, hawthorns, laburnum, white fringe, mountain ash, sour wood, silver bell tree, shad bush, several magnolias and flowering apples.

CHANGE OF COLOR IN HYDRANGEAS

The pink hydrangea (*H. hortensis*), which is commonly grown in tubs, sometimes turns blue and H. J. asks what the reason is. It is not well understood, except that it is due to some of the chemical constituents of the soil. A pink hydrangea can be turned blue by mixing half a pound of alum crystals with each bushel of soil, but there is no way of getting a hydrangea which is blue back to the pink color.

COLD PITS

The small greenhouse which Mrs. C. R. purposes to build will be very good fun, but I think she could have more pleasure for the same outlay and reduced running-cost by building a cold pit.

The cold pit is not only for the storage of such tender things as bay trees, hydrangeas, etc., but it can be used to keep pans of bulbs in until they are ready to bring forward in the house or greenhouse, and azaleas, rhododendrons and other potted things can be brought into flowering condition in such a house.

It requires no heat except that of the sun (and a lamp on very cold nights), since it is not a hothouse and the plants in it will not be flowered there early in the year.

A small cold pit is almost indispensable on any place, and one really needs it more if one has a hothouse.

THE BEST SEASON FOR PLANTING TREES AND SHRUBS

Which is the best time for planting trees and shrubs, asks Mr. M., and his question, which is asked oftener than any other perhaps, deserves some discussion, because it is important, though unanswerable.

The fall planting season is better than that of spring in that it lasts near New York from the first of October until the time the ground freezes, which may be late in December, giving plenty of time to do work which in the spring may have to be hurried in four or five weeks.

If storms delay the spring planting and if warm weather begins early, the trees and shrubs may be so far advanced when one gets them from the nursery or when one is able to plant them, that they will not bear transplanting without a check and may be a total loss, whereas in fall planting any stuff which is left over when the ground freezes can be heeled in and will go through the winter unharmed and can be planted at the beginning of the spring season.

There is no doubt that plants which can be successfully planted in the fall are better planted at that time under ordinary conditions because the ground becomes well settled about their roots which have time to grow before there is any strain put on them to supply the leaves of the tree with sap.

Most of the trees except oak, magnolias, birches and tulips, can be planted in the fall as well as in the spring. Oaks may live with fall planting, but magnolias are almost sure to die.

All shrubs do well with fall planting except Hypericum and one or two others.

Larches should always be planted in the fall, because their leaves start very early in the spring.

PLANTING SCHOOL GROUNDS

The trees and shrubs which are planted on school-grounds should be of the hardiest and most rugged kind, and if they have a few thorns, so much th better. Flowers, of course, are desirable in the spring, but the chief thing is to have the grounds look well dressed and orderly. Evergreens may be used, but in most cases I think they are quite out of the question, not only because of their cost but because they need more care and are less likely to endure the hard conditions of a schoolyard.

Aralia pentaphylla is an excellent shrub for such a place. It is a strong grower, reaching ten feet in height, the foliage is a dark shining green, and there are small thorns on the stiff stems.

The privets are all good and have the advantage of bearing pretty white flowers in June.

Barberries, of course, must be included and will prove satisfactory in any good soil where they are not too shaded. Their winter beauty is only one of their charms.

The *Caragana arborescens,* or Siberian pea shrub, is another hardy strong grower. It has yellow flowers in June.

Deutzias, Forsythias and Weigelas are quite possible, and so is the Syringa (*Philadelphus*), but lilacs, honeysuckles, hibiscus and spiraeas had better not be planted except in the deep country where flowers are common; in other places the temptation to pick them will be too great.

Oaks and maples are undoubtedly the best trees and should be planted in rather a formal way, in order to shade the whole playground.

Evergreens like the pines, and hemlocks would be grateful at the north side as a windbreak in winter, but they are too easy to climb to be planted in the schoolyard.

Shrubs with conspicuous fruit like the viburnum, are scarcely advisable, as it is doubtful if a stomach full of viburnum berries would be any help to the youngest scholar.

BUILDING
Construction
AND
Superintendence

By F. E. KIDDER, C.E., Ph.D.
Author of "The Architects' & Builders' Pocketbook"

Revised and Enlarged by
THOMAS NOLAN, M.S., A.M.

In Three Volumes, 7¼ x 9¾ inches. Sold Separately

Part I. Masons' Work

Ninth Edition, Revised. 965 Pages, 628 Illustrations. Price, $6.00, Postpaid.

Part II. Carpenters' Work

Seventh Edition. 544 Pages, 525 Illustrations. Price, $4.00, Postpaid.

Part III., Section I. Trussed Roofs and Roof Trusses

Second Edition. 299 Pages, 307 Illustrations. Price, $3.00, Postpaid.

MUNN & COMPANY, Inc.
361 BROADWAY NEW YORK

JUST PUBLISHED
AMERICAN RENAISSANCE

A Review of Domestic Architecture By Joy Wheeler Dow, Architect

ILLUSTRATED *by* NINETY-SIX HALF-TONE PLATES

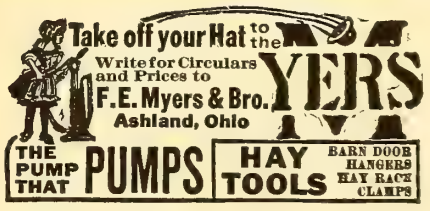
EASTOVER (Miniature). THE GARDEN FRONT
From "American Renaissance"

This book is a carefully prepared history of American Domestic Architecture from Colonial days, illustrated in the most elaborate manner and worthy a place in every architectural library, and should be read by every one who desires to familiarize himself with Colonial architecture and its effect on the architecture of to-day.

CONTENTS.—Chapter I., Ethics; II., Art and Commercialism; III., The Ancient Regime—Andrew Jackson; IV., Humble Beginnings of a National School; V., The Grand Epoch; VI., Early Nineteenth Century Work; VII., The Transitional Period; VIII., Reign of Terror—Its Negative Value; IX., Fashion in Architecture; X., Adaptation; XI., Concerning Style; XII., Conclusion.

HANDSOMELY BOUND IN CLOTH, GILT TOP
Price, $4.00 net

MUNN & CO., INC., NEW YORK



Sheep Manure

Kiln dried and pulverized. No weeds or bad odors. Helps nature hustle. For garden, lawn, trees, shrubs, fruits and house plants.

$4.00 LARGE BARREL, Cash with Order. Delivered to your Freight Station.

Apply now.

The Pulverized Manure Co., 21 Union Stock Yards, Chicago.

The Scientific American Boy

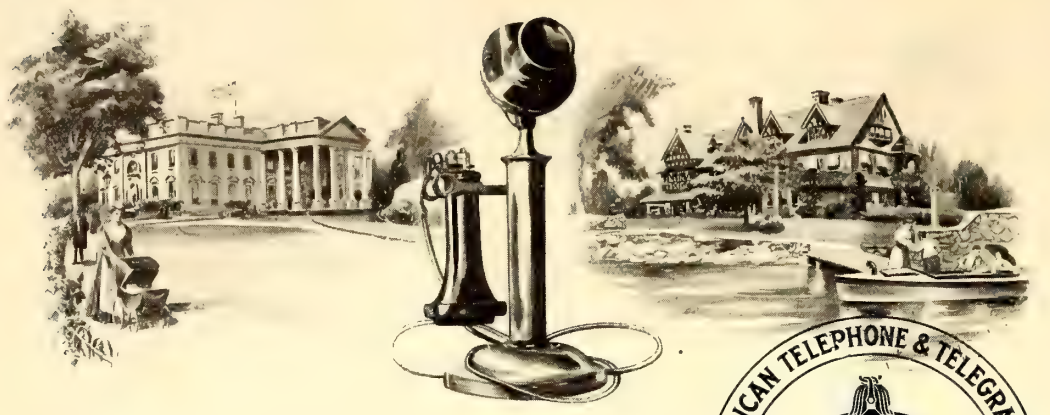
By A. RUSSELL BOND. 320 pages, 340 illus. $2.00 postpaid

A STORY OF OUTDOOR BOY LIFE

Suggests a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. Complete practical instructions are given for building the various articles, such as scows, canoes, windmills, water wheels, etc.

MUNN & CO., Inc., Publishers 361 Broadway, New York

In The Public Service



The President of the United States works for 80,000,000 people all the time.

He needs rest and change to keep him fit for his work, and yet he cannot neglect his official duties, he must always be within reach.

When Washington was president he rode his horse as far as Mount Vernon and kept in touch by messenger with the affairs of state. The President to-day has a wider range and can seek the cooling breezes of the New England coast.

The long distance telephone keeps him in constant communication with the capital and the nation.

The railroad will carry him back to Washington in a day, but usually he need not make even this brief journey. The Bell telephone enables him to send his voice instead, *not only to Washington but to any other point.*

The Bell system performs this service *not only for the President, but for the whole public.*

This system has been built up so gradually and extended so quietly that busy men hardly realize its magnitude or appreciate its full value.

Forty thousand cities, towns and villages are connected by the Bell system, which serves *all the people all the time.*

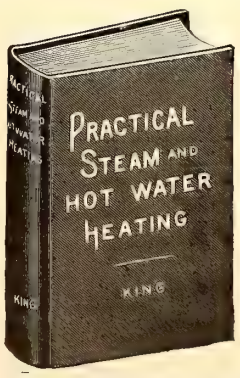
The Bell telephone has become the implement of a nation. It increases the sum total of human efficiency, and makes every hour of the day more valuable to busy men and women.

The highest type of public service can be achieved *only by one policy, one system, universal service.*

The American Telephone and Telegraph Company
And Associated Companies

Every Bell Telephone is The Center of the System.

JUST PUBLISHED **Practical Steam and Hot Water Heating and Ventilation** JUST PUBLISHED



By ALFRED G. KING

402 Pages. Containing 304 Illustrations

Price $3.00

An original and exhaustive treatise, prepared for the use of all engaged in the business of Steam, Hot Water Heating and Ventilation

THE standard and latest book published. Tells how to get heating contracts, how to install heating and ventilating apparatus. Describes all of the principal systems of steam, hot water, vacuum, vapor and vacuum-vapor heating, together with the new accellerated systems of hot water circulation, including chapters on up-to-date methods of ventilation; fan or blower system of heating and ventilation; rules and data for estimating radiation and cost, and such other tables and information as make it an indispensable work for heating contractors, journeymen steam fitters, steam fitters' apprentices, architects and builders.

This work represents the best practice of the present day and is exhaustive in text, diagrams and illustrations.

CONTAINING CHAPTERS ON I. Introduction. II. Heat. III. Evolution of Artificial Heating Apparatus. IV. Boiler Surface and Settings. V. The Chimney Flue. VI. Pipe and Fittings. VII. Valves, Various Kinds. VIII. Forms of Radiating Surfaces. IX. Locating of Radiating Surfaces. X. Estimating Radiation. XI. Steam-Heating Apparatus. XII. Exhaust-Steam Heating. XIII. Hot-Water Heating. XIV. Pressure Systems of Hot-Water Work. XV. Hot-Water Appliances. XVI. Greenhouse Heating. XVII. Vacuum Vapor and Vacuum Exhaust Heating. XVIII. Miscellaneous Heating. XIX. Radiator and Pipe Connections. XX. Ventilation. XXI. Mechanical Ventilation and Hot-Blast Heating. XXII. Steam Appliances XXIII. District Heating. XXIV. Pipe and Boiler Covering. XXV. Temperature Regulation and Heat Control. XXVI. Business Methods. XXVII. Miscellaneous. XXVIII. Rules, Tables and Useful Information.

Valuable Data and Tables Used for Estimating, Installing and Testing of Steam and Hot-Water and Ventilating Apparatus are Given

MUNN & COMPANY, INC. **361 BROADWAY, NEW YORK CITY**

Problems in Home Furnishing

(*Continued from page xiv*)

across the bottom, may cover the electric bulb without the usual base or standard required by a heavy lamp. A wire frame may be covered with grass cloth or wall-paper by one who is clever at such things, or a Japanese paper shade with enameled ribs may be bought. The wicker shades with paper linings that have been so popular this summer may also be used by this correspondent for her special need.

COLOR SCHEME FOR A MUSIC ROOM

"A Music Teacher" inquires about some way to bring interest into the room in which she does her teaching. "The walls need repapering, and the white woodwork will have to be painted, and I would like to improve on the present coloring of both, which is very ordinary. I believe that color effect in a room engages the interest and gives pleasure, but I do not know how to create this for myself and my pupils."

A new paper made by an American firm and printed in dull gray with a little gold, green and lavender in the background, is suggested for the wall covering, as it gives a misty, outdoors feeling and does not require pictures for a decoration. The woodwork will need to be painted gray to correspond with the tone of the paper. Thin écru net may be hung across the windows, with over-curtains of gold color. (There are various materials from which to choose, according to the amount that is to be expended.) If there is a mantel, a mirror with a frame in a hand-carved pattern may be hung above it. If rugs are to be used their coloring should be kept subordinate to the wall and curtain colors. Superfluous furniture should be eliminated from the room, and comfortable chairs with arms installed. The rattan chair made in China and costing ten dollars looks well in a studio.

CARE OF HOUSE PLANTS IN WINTER

TO BE literally correct the care of house plants begins much in advance of the winter season, or at that time at which the plants which are to be grown for foliage or bloom in the coming winter months are purchased or secured.

As soon as it is warm enough to place house plants in the open air one may begin to prepare for winter by starting cuttings of geraniums and other plants. A sand-box in the open air in a more or less sunny position, according to the class of plants which are to be grown, is the best place for this preliminary work. For the growing of geraniums, heliotropes and such sun-loving plants a south exposure will be found favorable, while an eastern position will answer for most other varieties of plants. Any large, shallow box suited to the number of plants to be cared for will do, and it should be elevated upon supports of some kind to a height that will be convenient to work at when seated on a chair beside it; also, it should be of a width easily reached across.

The box should be filled full of clean, white sand, into which the pots of plants are plunged to the rims. Cuttings to be rooted may be thrust into the sand between the pots, and will quickly strike or root. Plants usually make abundant root growth in the sand—much in advance of that made when started in earth, and it will not be necessary to pot off the cuttings until they have made some top growth; then they should be potted in quite small pots of good compost suited to the particular needs

A CRAFTSMAN HOUSE FROM CORNERSTONE TO CHIMNEY-POT CURIOUSLY SUGGESTS THE CHARACTER OF ITS UNIQUE INTERIOR

This work is in a class by itself—no increase in cost over ordinary construction. We invite your inspection of many attractive houses, bungalows and chalets, built in the last few years, some having fireproof features in terra-cotta tile with slate, tile or asbestos roofs—and completed under one contract covering every branch of the work.

All hand wrought materials prepared in our own shops, including wood craft and metal work.
May we co-operate with your architect, or recommend one best fitted for your particular needs?
Our collection of designs is very interesting.
We build anywhere within one hundred miles.

BUILDERS AND CRAFTSMEN COMPANY

38 WEST 32ND STREET NEW YORK

INVESTIGATE OUR BUILDING METHOD

Cottage Designs

THESE books offer to architects, builders, homeseekers and investors by far the most complete collection of plans ever brought out, while the price is so low as to place them within the reach of all who have an interest in the building of homes. The designs are compiled with a view to representing all grades of cost, from the simplest types of cottages, as illustrated in the first series, to the comparatively elaborate structures reaching to $10,000 or more, in cost, treated in the fourth series, so that examples are given covering nearly every requirement, with respect to cost, in inexpensive homes.

No. 1. Cottage Designs with Constructive Details

A series of twenty-five designs of cottages, most of which have been erected, ranging in cost from $600 to $1,500; together with the details of interior and exterior finish, all drawn to convenient scale, and accompanied by brief specifications. Illustrated with 53 full-page plates of floor plans, elevations and details.

No. 2. Low Cost Houses with Constructive Details

Embracing upward of twenty-five selected designs of cottages originally costing from $1,000 to $3,000, accompanied with elevations, floor plans and details of construction, all drawn to scale together with brief descriptions and, in many instances, full specifications and detailed estimates of cost. Illustrated by 61 full-page plates of floor plans, elevations and details.

No. 3. Modern Dwellings with Constructive Details

A selection of twenty designs of artistic suburban dwellings erected in various parts of the country, at costs ranging from $2,800 to $7,000; embracing floor plans, elevations and constructive details, showing interior and exterior finish, and drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions, from photographs of the completed structures, and 61 full-page plates of floor plans, elevations and details.

No. 4. Suburban Homes with Constructive Details

Comprising twenty selected designs of attractive suburban homes, ranging in cost from about $3,000 upward; embracing floor plans, elevations and constructive details, showing interior and exterior finish, all drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions from photographs of the completed structures, and 75 full-page plates of plans, elevations and details.

ONE DOLLAR EACH, POSTPAID
(Sold Separately)

MUNN & CO. INC. *Publishers of* SCIENTIFIC AMERICAN
Three-Sixty-One Broadway, New York

FLINT'S FINE FURNITURE

LIBRARY METROPOLITAN LIFE EXECUTED BY FLINT'S

Interior Decorations and Furnishings

No matter how much forethought and study is personally given to the furnishing of the home, questions are almost certain to arise where the expert advice of a dependable authority is required.

Time, trouble and, not infrequently, needless expense may be saved by consulting our staff of experienced artists who are at your service to solve perplexing questions, suggest effective and original color schemes and assemble for your inspection a complete room, showing Furniture, Carpets, Wall Hangings and Draperies in a true period or harmony.

Designs, colored drawings and estimates submitted. No charge is made for professional services of this nature.

GEO. C. FLINT CO.

43-47 WEST 23RD ST. 24-28 WEST 24TH ST.

The Heart of the House

Possibly you think we have something pretty to say about the baby Well, no doubt there is much to be said in his behalf; but if there is anything that is rightly entitled to the honor of being called the "Heart of the House," it is the pump that gives the house it circulation of pure water.

What the animal's heart is to the creature's life, such is the Rider-Ericsson Pump to the home in the suburbs: and its operation is as simple, as certain, as automatic as that of a healthy heart.

"It has done it work faithfully, without hitch or hindrance," says one of our customers, in a happy summing up of the whole case.

That is just what you want in the heart of your house, is it not?

Too much cannot be said of the importance—the *vital* importance—of the water supply in the country house. Practically every department of the household depends on it, from the supply for the morning bath to the feeding of the kitchen boiler and the watering of the thirsty garden and lawn.

It is only fair to your household, as well as to yourself, to have a pump installed which will do its work unfailingly and with no cause for anxiety on your part.

Having installed the **Hot-Air Pump,** you can dismiss this important factor from your careful calculations—and rest assured that the work will be well done.

Be sure that the name "REECO"-RIDER or "REECO"-ERICSSON appears upon the pump you purchase This name protects you against worthless imitations. When so situated that you cannot personally inspect the pump before ordering write to our nearest office (see list below) for the name of a reputable dealer in your locality who will sell you only the genuine pump. Over 40 000 are in use throughout the world to-day

Write for Catalogue E, and ask for reduced price-list.

RIDER-ERICSSON ENGINE CO.

35	Warren Street	New York
239	Franklin Street	Boston
40	Dearborn Street	Chicago
40	North 7th Street	Philadelphia
234	Craig Street, West	Montreal, P Q
22	Pitt Street	Sydney, N S W

(*Also builders of the new* **"Reeco" Electric** *Pump.*)

Hot-Air Pump

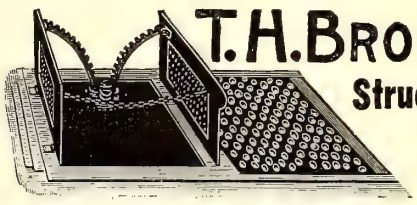
ARE YOU GOING TO BUILD?

The specification of Woodward-Eubanks Mantels by the Architect means satisfaction to the cultured home-builder

Natural beauty of materials and harmonious elegance of design form a combination of constructive elegance unsurpassed.

Our 75-page catalog, which will be sent free (enclose ten cents to cover postage), also gives an illustrated list of Gas and Electric Fixtures the most unique line on the market. We are manufacturers of Tiles, Grates, etc.

WOODWARD-EUBANKS MANTEL CO., Dept. D, Atlanta, Ga.



T. H. BROOKS & CO. CLEVELAND, O.

Structural & Ornamental Steel Work

FLOOR & SIDEWALK LIGHTS.

SEND FOR CATALOGUES.

Dixon's Silica Graphite Paint Lasts

And the reason why it lasts is because its pigments are inert. What have inert pigments to do with it? Our Booklet 106B will tell you.

JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.

JOHN DAVEY
Father of Tree Surgery

"The Salvation of Our Trees" Educational Lecture by John Davey "The Father of Tree Surgery"

John Davey, the world's greatest tree expert, who gave to mankind the wonderful profession of tree surgery, is rounding out his useful life by the delivery of an illustrated lecture, "The Salvation of Our Trees," that arouses each community in which it is heard to the needs of its trees. Knowledge of trees, founded on abiding love for them, enables Mr. Davey to speak with convincing force.

This lecture, using over 150 beautiful lantern slides, illustrates *real trees,* portraying every phase of tree life—perfect and imperfect trees; sick and wounded trees; neglected and "butchered" trees; improperly treated trees, and trees that have been saved by the science of tree surgery, properly applied.

Mr. Davey, describes with powerful effect the wonders of tree life, from an entirely new standpoint. His words are the expression of a life experience, and appeal to the best emotions of his hearers—for a deeper appreciation of the significance of trees and a tenderer regard for their welfare.

"The Salvation of Our Trees" is practical, yet entertaining; instructive, but filled with human interest; original, and little less than astounding in many of its revelations. The president of the American Civic Association said of this lecture "I wish ten thousand communities might hear it; *that* would mean the salvation of a million trees."

Fall and winter engagements for Mr. Davey are rapidly being completed. Special rates will be made to Park Commissions, Civic Improvement Societies, Boards of Trade, Schools and Colleges, Women's Clubs and Chautauquas. Those interested should write promptly, for open dates, booklets and full information.

THE DAVEY TREE EXPERT COMPANY
(Operating Davey's School of Practical Forestry)
Desk 2, KENT, OHIO

"THE TREE DOCTOR"—The latest book of John Davey. Practical from cover to cover. 213 beautiful photographic illustrations. *It tells how;* is good to read and better to study. $2.00 postpaid. Large and handsome brochure "Our Wounded Friends, The Trees" free to owners of property with trees.

of the plant—good garden loam for geraniums, leaf mold and sharp sand for begonias, fuchsias and various other plants, and a combination of loam, sand and mold for the majority.

Many varieties of house plants may be started from seed sown in flats in the house and in hotbeds, and as soon as large enough be potted off and plunged in the sand-box. Carnations, cinnerarias, calceolarias, fuchsias, geraniums, hibiscus, lantanas, abutilons and the like are all easily raised from seed, and the sand-box will prove a safe harbor for them during their period of growth in the summer.

The sand in the box should never be allowed to dry out, and this surrounding the pots maintains an even degree of moisture, so that the plants themselves require less frequent watering. While they are still small the application of water should be very carefully regulated, as too much is apt to induce a spindly, weak growth, while too little may cause the death of the plant. After the plants have reached a three-inch pot a longer time may elapse between waterings, allowing the soil in the pots to become nearly, but not quite, dry, as this induces a sturdier, stockier growth. Especially is this the case with geraniums, which may be allowed to become quite dry between waterings after they have arrived at a four-inch pot.

The condition of the root growth must be watched, and as soon as the roots fill the pots they should be shifted on to a size larger. In this way such plants as cinnerarias and the like should have had several shifts between their first potting and the time when they are to be brought into the house in the fall, so at that time they should occupy a seven or eight-inch pot and be in vigorous condition and well set with flower buds. All buds which have appeared during the summer months should have been promptly removed up to the first or middle of September, by which time the plant will be sufficiently developed for blooming and the flowers will arrive at the proper time for indoor display.

Any plants which have been bedded out during the summer and are wanted for winter blooming should be lifted not later than the middle of September and gotten into winter quarters before the fires are kindled or the doors and windows closed. They should be prepared for lifting by cutting around the plants with a sharp knife or trowel, making the cut the size of the pot to be used in potting; this should be done a fortnight before lifting, that the plant may have time to recover and to begin the formation of new roots. The plants should be thoroughly soaked the night before lifting, and the spade, rather than a trowel, should be used for the work, lifting the plant and slipping it into the pot with one operation and as little handling as possible. Some plants are difficult to lift owing to the small amount of fibrous roots they possess; this is especially true of the geranium, and for this reason it is quite apt to drop its leaves after potting. The only preventive is to disturb the ball of earth as little as possible and to keep the foliage wet for some time after lifting by frequent spraying, setting the pot in a cool, shady place for a few days until it has recovered from the change. Geraniums are much more apt to shed their leaves than their flowers, but as a new shoot or branch will usually be produced from the axile of every discarded leaf, it is not so great a misfortune as would at first appear, as every new branch means new blossom points, and geraniums are plants which require encouragement to make stocky growth.

Before bringing the plants into the house, or even lifting them, it will be well to see that everything is in readiness for their reception, and, above all, to be sure that there is sufficient

room for the number of plants to be placed. Only good vigorous plants should be used, and where the space at command is limited it will be well to cull severely rather than to overcrowd. Often there will be certain plants which are in full bloom at the time of lifting but which give little promise of further bloom after the present florescence is passed; these should be provided with a place in a warm light cellar, to which they may be removed when through blooming and their place supplied with blossoming bulbs. Deciduous shrubs and plants may be wintered in a dark cellar, but evergreen plants, and more especially those of soft, succulent growths, require light.

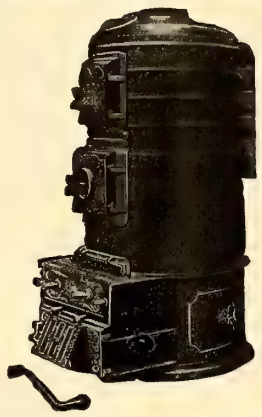
It must be remembered that plants in the house will require all the light possible, and that unless one wishes to sacrifice the personal use of the windows one should limit the number of plants retained. It must also be remembered that the closer plants are placed to the glass the less light there will be; placed a little back from the glass the light has a chance to enter and diffuse itself. Geraniums, unfortunately, do not bloom very well unless quite close to the glass, so should have a window to themselves; indeed, it is always more satisfactory to grow only one variety of plants in a window, not alone that the effect is better, but as they all require the same treatment the care is much simplified and the results more certain.

A very attractive way to arrange plants is by using long, narrow window-boxes, sufficiently wide to hold one row of pots and set the pots therein, filling up the intervening spaces with sand or sphagnum moss. By this method the plants may be lifted and turned as required, and any which become shabby or otherwise undesirable may be removed and fresh ones substituted. These boxes should be finished or painted to match the trim of the room and a pretty finish is given, where white is the color scheme, by adding a strip of picture-molding (to match the picture-rail) around the bottom.

Such a box filled with primroses is charming, and may be placed in a west window, the baby primrose doing exceptionally well in a west light; geraniums or heliotropes may be placed in the south windows, and ferns, begonias and asparagus vines in a north window. Rex begonias—which seldom do well in the dry, heated atmosphere of the living-room—may be grown successfully by shielding the box with a pane of glass the size of the lower half of the window; this should be lightly mounted in a frame and hinged to the top of the lower sash, dropping down over the outer edge of the box; sufficient air and heat will enter at the side, and the glass excluding the dust and retaining the moisture creates a miniature greenhouse whose atmosphere is very congenial to the plants. If the glass comes too close to the plants it may be held away from them by a thin stick of wood attached to the side of the frame or of the box.

Next in importance to good light, perfect ventilation and a daily supply of fresh air is important; fresh air from outside should not be allowed to blow directly on the plants, however, but should rather be admitted by opening a door or window in an adjoining room and thoroughly ventilating the apartment in this way. Heat supplied in the same indirect manner is far more agreeable to plants, and does away with much dust which collects on the foliage, and is most injurious. Plants grown in a room which takes its heat from an adjoining one always do far better than in a room with a fire; for this reason bedroom windows are very favorable positions for plants, and if a watering pot is kept with them into which the wash water from the bowl may be emptied, and this used for watering the plants, the growth will usually be all that is desired. Soapsuds is an excellent insecticide and fertil-

GURNEY HEATERS
FOR STEAM OR HOT WATER



Gurney Heaters are more and more preferred as their worth becomes appreciated. It is the unanimous verdict of all who use them that they combine a greater degree of durability, economy and efficiency than any other heater.

Back of each **Gurney Heater** is the best mechanical and engineering skill, combined with high-grade materials. No part is slighted in the making; hence, the **Gurney** gives uniform, dependable service.

The **Gurney Heater** is made for either hot water or steam. It consumes less fuel than others; assures complete combustion and an even and sure circulation of heat.

See that the **Gurney** is installed and avoid disappointment. If you wish absolute evidence of **Gurney** superiority, ask your neighbor who owns one. Can be installed in old or new buildings without inconvenience or disturbance.

Send for Illustrated Catalogue or consult your local dealer.

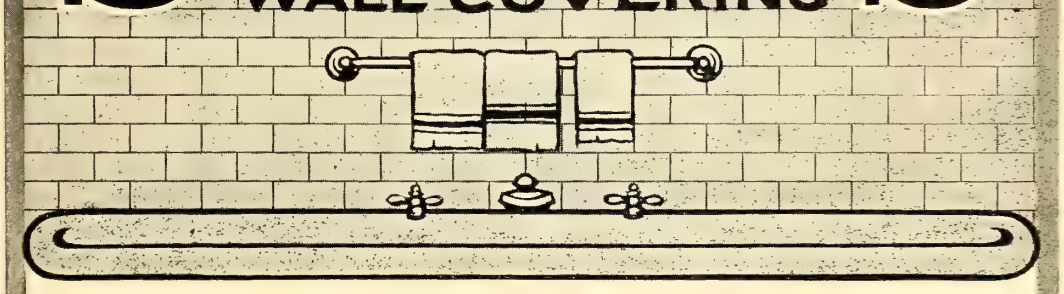
GURNEY HEATER M'F'G COMPANY

NEW YORK BRANCH: 12 East 42d St., New York City.

188-200 Franklin St., cor. Pearl BOSTON, MASS.

Distributors in the leading cities of the country.

SANITAS
THE WASHABLE WALL COVERING



SANITAS BATHROOMS

Most well kept homes have Sanitas bathrooms. They're the cleanest, the most easily kept clean—the brightest, most attractive.

Expense need not keep you from having Sanitas on your bathroom walls. It's the best, yet the least expensive.

Printed in oil colors on strong muslin and *glazed like tile,* in the handsomest tile designs. Other glazed patterns for the kitchen and pantry.

For living, dining and sleeping rooms use the beautiful dull finished Sanitas reproductions of the finest wall papers and fabrics.

All Sanitas is fade-proof, stain-proof, crack-and-tear-proof. A damp cloth cleans it instantly.

WRITE TODAY to our Department of Home Decoration. State which room or rooms you wish to decorate and receive free samples with sketches of clever new effects.

MERITAS STANDARD OIL CLOTH COMPANY

When you buy table oil cloth be sure to ask for "MERITAS" This trade mark on back of every yard guarantees perfection.

STANDARD OIL CLOTH COMPANY, Dept. 11, **320 Broadway, New York City**

"The Complete Hotel"

Hotel Statler
BUFFALO

300 Rooms - 300 Baths

Modern in Construction. Artistic in Appointment. Complete in Equipment. Perfect in Service.

Circulating Ice Water to All Rooms

European Plan Exclusively

"You choose the colors"
Thread & Thrum Rugs
we'll make the rug"

YOUR own individual rug, different from all other rugs, and in a high-class wool fabric adapted to your own decorations. If the rugs in stock colors do not suit your requirements we will make one that will, either plain, self-tone or contrast. All sizes up to twelve feet wide, any length. Seamless, wool weft, reversible, heavy and durable. Sold by best shops or write for color line and price list to ARNOLD, CONSTABLE & CO., NEW YORK.

THREAD & THRUM WORKSHOP, AUBURN, N. Y.

Ask your dealer for
ELECTRIC GARDEN HOSE
The Corrugated Hose made in Wilmington, Delaware. Identify by the RED label on every length.

Home-made Gas-Light From Crushed Stone

FOR a long time *City* people were afraid of Gas, thinking it might "blow-up the house" or poison them in their sleep.

But, little by little it came home to them that there were many more accidents recorded in the newspapers from carrying around Candles and Lamps than there were from the fixed-on-the-wall Gas jets.

And, the Insurance people soon figured this out in percentage, for their own sakes.

So,—it would need a lot of searching *today* in Cities or Towns to find a Candlestick or an *occasional* Kerosene Lamp.

Gaslight *for the Country* came slower, with Rural Delivery and the Rural Telephone.

Because "Rural Gaslight" must be *made at home* as Candles were,—and Country Folk are not Chemists.

* * *

But, the "ready-to-make" Gas material came at last.

Its name is "Calcium Carbide."

An experimentalist named Willson produced this weird stuff with an Electric Furnace while trying to make something else.

It *looks* like *crushed stone* but it *acts* like magic.

And, it solved the Rural Gaslight problem—instanter.

Operating under the "Willson" and many other patents, the Union Carbide Company, with headquarters at 157 Michigan Avenue, Chicago, is now the largest manufacturer of Carbide in the world.

"Union Carbide" is made at the Company's immense factories at Niagara Falls and Sault Ste. Marie, and is distributed exclusively by Union Carbide Sales Co., through its warehouses scattered all over America.

"Union Carbide" won't burn, can't explode, and will "keep" anywhere for years, stored in 100-lb. watertight steel drums in which it is shipped from the factory.

When "Union Carbide" is dropped into plain water it produces Acetylene Gas which is *ten times* richer than the best City Gas.

When this Gas is lighted at a burner, same as City Gas, it gives forth a brilliant *white* light, of exactly the same chemical quality and *color-balance* as Sunlight.

* * *

Acetylene Gas being ten times *purer* than City Gas only *one-tenth* as much of its flame is needed as would be required for the same candle-power of Light from City Gas, Kerosene or Gasolene.

This means that only a very small *fraction* of the heat, with *none* of the soot and smell of Kerosene or Gasolene is present.

It also accounts for the fact that an Acetylene Light of 24 candle-power costs only about 3¾ cents for 10 hours, lighting; while regular Kerosene Lamps cost about 6 cents in Kerosene, Chimneys and Wicks, on the average, for the same 24 candle-power in 10 hours' lighting.

And, 40 Acetylene Lights need only about 30 minutes *per month* of labor, while 8 to 10 Kerosene Lamps need that same 30 minutes of labor *every day* for 365 days in the year.

* * *

Compare 6 *hours* per year for 40 Acetylene Lights with 183 *hours* per year for 8 or 10 Kerosene Lamps.

And consider the *unpleasant* kind of work such "Lamp Slavery" represents.

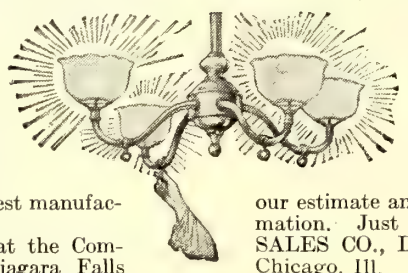
Meantime, Acetylene is the most *beautiful* Light ever used, as well as the most convenient.

Brilliant, cool, steady, soft, *safe*, and colorless as Sunlight itself.

It is the *only* artificial Light under which pale-yellow, pale-blue, or pink are seen at their true value.

Two million Americans use it regularly today, and over 348 Towns are publicly lighted by it.

You will be surprised to find out how easily and cheaply you can make this wonderful light yourself.



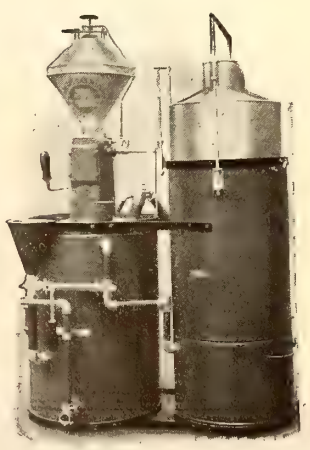
Not only light for every room in your house, but light for your out-buildings, barns and barnyard, if you have any, and, what's more, light that can be turned on by the pull of a chain *without the use of matches.*

Write us today how large your house and how many rooms you have, and receive our estimate and free books giving full information. Just address UNION CARBIDE SALES CO., Dept. D-14, Adams Street, Chicago, Ill.

YOU can make the Brilliant **Acetylene Gas** Easily! Safely! Cheaply!

WITH THE

Sunlight "Omega" Generator



Only Automatic Generator with the modern **INDIRECT** feed operated by its own power!

INSURES ABSOLUTE SAFETY!

Easiest to understand—easiest to handle! Nothing to get out of order!

Costs no more than the other kind!

Brighten up your home!

Our Illustrated Book Free. Tells all about up-to-date lighting of country homes. Get it! Read it!

The Sunlight Gas Machine Co.

47 Warren Street, New York

izer, and water from this source is usually of the right temperature.

The weekly or semi-weekly bath is of first importance, and this, more than any one thing, will tend to keep the plants in health and free from insects; the best way to supply this is to take the plants to the bathroom and use the bath spray, first tempering the water to about the temperature of the room and sending the spray over and under the foliage so that every part of the plant is thoroughly washed. If there is no bathroom convenient, then the plants may be carried to the kitchen or laundry and a short hose attached to the water supply used, or a watering-pot employed, but plants should not be carried through cold halls or rooms when wet, and if this can not be avoided then it will be better to give them their bath where they grow by means of a zinc tube and watering-pot. This, in the case of small plants, is not difficult, and the weekly bath may be supplemented by a daily spraying with a rubber sprinkler, preferably of the crooked-necked variety.

Weak-limbed, straggly plants, like the ivy geraniums, petunias and the like, should be carefully staked, using neat bamboo stakes for the purpose or other sightly supports.

If good soil and suitable fertilizer has been used in potting the plants in the fall, little if any further enrichment will be necessary during the winter. It is a good plan to combine a small quantity of bone meal with the soil in the pot, as this is quite lasting in its effects, but liquid fertilizer should never be given to plants which are not already growing; weak, backward plants which can not assimilate the food already in the soil will be simply given an attack of indigestion by the presence of more food. Ammonia, which is not a food but a stimulant, may be given in weak doses occasionally to create a desire for food, but that is all.

Over-watering is one of the chief sins of treatment which indoor plants receive. Almost all plants are benefited by being allowed to become nearly dry between waterings; wet soil and poor drainage means sour soil—a condition no plant can endure and remain healthy, and it is to this cause we must look in nine times out of ten when a plant becomes ailing; the plant should be turned out of the pot by placing the fingers over the soil and reversing the pot and giving it a sharp tap against the side of the table, when the ball of earth will roll out in the hand and the condition of the roots may be examined; if no white roots appear and few if any brown ones, it is an indication that the plant is occupying too large a pot, and it will be better to remove a portion of the earth and repot in a smaller one, using good drainage and packing the earth very firmly about the roots if the plant is a hard-wooded one, more lightly if of soft, succulent growth, like the begonias or impatians. Primroses, which are inclined to decay at the crown, should have the earth higher at this point, while heliotropes, on the other hand, which make a close, fibrous mat of root, difficult of penetration by water, should rather be lower than higher at the sides of the pot that the water may soak down through the roots rather than run off between the pot and the ball of earth; it will also be well to open a few channels for it by running a pencil down into the soil.

Where there is found a good growth of new roots the plants should be carefully returned to the pot and allowed time to give results; it is all right, and probably only needs a little time to produce flowers; at this time if there is doubt of the fertility of the soil, a little weak liquid manure may be given or a little bone meal sprinkled over the surface of the soil and worked into it with a fork.

Suitable soil for repotting should be pro-

vided in the fall, and sharp sand, broken charcoal and sphagnum moss be kept handy for use in case of any plant which may need repotting; accidents often occur by which a plant is thrown down and the pot broken and nothing at hand to repair the damage; this should be provided for in season.

Plants and bulbs for spring potting often arrive from the florists at a time when earth is not available from the garden, and a supply in the cellar will be found most convenient.

Hanging baskets present one of the most difficult problems for winter care; their position in the upper part of the room, where the air is several degrees warmer than at the window-sill, necessitates more frequent and copious watering than pot plants receive, and the watering is attended with difficulty of various kinds. Plants in earthen baskets are mussy things to water owing to the tendency of water to run off through the holes in the sides of the basket for hanging it; the drainage hole in the bottom also affords another means for a deluge, unexpected and unpleasant; for this reason I prefer the wire baskets lined with moss, which, with proper watering twice a week, will usually prove very satisfactory. The best way to water these is to take them down and immerse the entire basket in a pail of tepid water until the ball of earth is thoroughly soaked; the basket should then be thoroughly drained before returning it to its position in the window by setting it over an empty pail or large pan until the water ceases to drip from it. Treated thus the plants will make a very satisfactory showing.

Plants which are kept growing and clean will seldom be troubled with insects; white worms in the soil, which may be destroyed by soaking the earth with lime water, and green lice are the most common foes, and the latter may be destroyed by smoking the plants with wet tobacco stems laid on coals or by spraying with water heated to a temperature of one hundred and forty degrees. This will also be found effective in ridding plants of red spider; in this case, when the plants are of suitable size, resort may be had to dipping the entire plant in hot water of about one hundred and thirty degrees and hold it there a couple of minutes. This not only kills any insects with which it may be infested but also cleans and invigorates the plant.

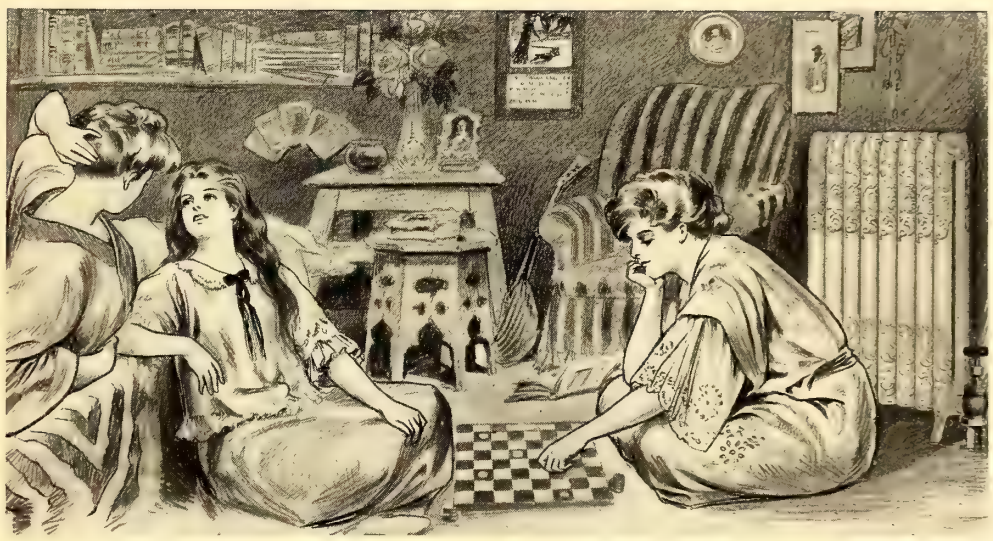
CARING FOR CANNAS AND OTHER ROOTS DURING WINTER

By Ida D. Bennett

THE care of cannas and roots of other plants used for summer-bedding during the winter months is one of the perplexities of gardening, so prone are they to decay. I have known professional florists who failed signally with the finer grades of cannas—the orchid flowered, though the large-leaved common kind gave little, if any, trouble.

One of the chief causes of trouble with the canna is having the roots out of the ground too long; this is caused by digging too early—often as soon as the frost has cut the tops, and starting too late in the spring, as it is in the late days of winter that the chief mischief to the roots occur. This late starting is often unavoidable. Florists who have every facility for the work can bring out the roots, divide them, and set them to growing in sand over

Warm lounging hours



Happy womanhood means happiness for mankind. Mother instinct demands warmth—because warmth is the heart of the home. All know that a bleak house is a house of trouble. Rich tapestries, luxurious couches, and rugs of Persian weave can never cheer the rooms not provided with the soft, pure warmth and ventilation of Hot-Water, Low-Pressure Steam, or Vacuum heating.

AMERICAN RADIATORS & IDEAL BOILERS placed in the home will comfort every part with genial, healthful warmth. Throw out the old-fashioned heating and watch the change in womankind. Every modern home is now being supplied with IDEAL Boilers and AMERICAN Radiators because people everywhere are beginning to realize all the merits of this way of heating.

Every inch of heating surface in the world-famous IDEAL Boilers and AMERICAN Radiators has been designed and stands for one purpose—thorough heating results with least expense for fuel. We do a world-wide business and keep constantly informed as to the needs and developments in heating practice. Hence our product is ever kept advancing, thus meriting the high endorsement of all architects and heating engineers in America and Europe.

Whether your building is old or new, farm or city, it can be heating-comforted without tearing up, or disturbing occupants. IDEAL Boilers and AMERICAN Radiators save heating dollars for the owner, and their cleanliness so reduces housework that the women folks may have and enjoy "many lounging hours." Write us to-day for free book, "Ideal Heating Investments."

A No. 3015 IDEAL Boiler and 175 ft. of 38-in. AMERICAN Radiators, costing the owner $125, were used to Steam heat this cottage.

A No. 3-22 IDEAL Boiler and 400 ft. of 38-in. AMERICAN Radiators, costing the owner $215, were used to Hot-Water heat this cottage.

At these prices the goods can be bought of any reputable, competent fitter. This did not include cost of labor, pipe, valves, freight, etc., which installation is extra and varies according to climatic and other conditions.

Public Showrooms all large cities

AMERICAN RADIATOR COMPANY

Write to Dept. 6 CHICAGO

Cattle Manure in Bags *Shredded or Pulverized*

Best and safest manure for florists and greenhouse use, absolutely pure, no waste, no danger. Write for circular and prices.

The Pulverized Manure Co.
21 Union Stock Yards, Chicago.

the pipes in the greenhouse before any real harm is done; but in the private house—unless there is a conservatory or greenhouse attached, there is seldom room for caring for any considerable number of bulbs where there will be light and the necessary amount of heat, so that they must be left until March at the earliest.

They may, however, be left in the ground as late as possible—until the last of November, any way—and, in late falls, it may be practicable to leave them well on towards Christmas. The tops should be cut back, as soon as frozen, as far as sound tissue; and in this connection I would suggest the heavy mulching of the beds with dead leaves, lawn clippings or other cover, at the approach of a killing frost, bringing the litter well up about the stems in order that the frost may be kept as far as possible from the roots. After cutting back the frozen tops the bed should be piled high with leaves or other mulch and the whole protected with canvas or other material which will shed rain, as the protective value of the leaves rests in their dryness—a wet mass about the cannas would add to the danger of frost.

A bright day, free from frost, should be selected for the final digging of the roots that there may be no danger of their becoming chilled in the operation; the roots should be lifted with as much of the earth adhering as possible and placed in a warm, dry cellar in shallow boxes and enough earth thrown over them to protect them from the air. Occasionally during the winter they should be examined to see that they are not becoming dust-dry, in which case they should be sprinkled lightly with water. By February it will be necessary to examine the condition of the roots as to dry-rot or decay, and if any of the roots are found diseased they should be at once removed that the trouble may not spread throughout the entire box of roots.

CALADIUMS

except the new flowering caladiums, which are a very uncertain proposition, are more easily cared for than cannas; that is, they winter better, but they require more heat. They may be placed in boxes like the canna, but the boxes should be in a warmer place and should be elevated on something three feet or more from the floor, especially if the floor be cold and damp as in ordinary cellars. Only a furnace cellar is a safe repository for this class of roots, but gladiolas and dahlias will winter safely in any cellar that will keep potatoes in good condition. The greatest success I have had with caladiums has been to lay them on the ground under the hot water-pipes where they extend outside of the cellar (the cellar not being under the entire house and the opening under the foundation of the remaining part being large enough to enter), and covering them with earth and sprinkling two or three times during the winter. In this situation they came out in splendid condition in spring, showing green leaf-shoots six or eight inches long.

DAHLIAS

winter easily packed in dry sand, earth, or merely thrown in a box in the cellar. They should not be dug too early, and if they are taken up when the earth about them is moist enough to adhere to the roots in considerable quantity they will give no trouble about keeping. When they have been well frosted before digging the dead stalks should be cut back to live tissue, and in placing them in the boxes or baskets they should be set stalks up.

GLADIOLA

are as easily care for as dahlias. They should be left in the ground until the foliage is well ripened and then dug with the stalks attached and laid in a warm, sunny position to dry and ripen, after which the stalks should be cut—never torn—off three or four inches from the bulb and the bulbs placed in paper sacks—flour sacks are best—and hung from the rafters of the cellar or other cool place. They will require no further care until time for starting them in the spring.

MONTBRETIAS

when lifted for the winter require the same care as the gladiolas—to be taken up, dried and hung in paper bags until spring. In taking them up the connecting roots between the bulbs should not be disturbed, as these are the rhizomes on which new bulbs appear and their destruction much lessens the increase which is usually very great.

TUBEROUS BEGONIAS

should be carried through the winter in the pots in which they were grown, allowing them to dry off gradually and placing the pots in a warm, dry place over winter, as a closet off of a room, where there is fire. If they have been grown in the open ground or the window-box they should be potted and allowed to ripen before putting away.

FANCY-LEAVED CALADIUMS

require the same treatment as the begonias and are very susceptible to decay, as is also the

TIGRIDIAS

which are only wintered successfully in soil in which they have grown, or by potting or burying in dishes of earth and allowing them to become established before setting away for the winter. They are much afflicted with a blue mold, and it is rare to receive bulbs from the seedsman and florist free from this trouble. They should not be taken to the cellar, but placed on a shelf in a warm closet or in a drawer.

ISMENES

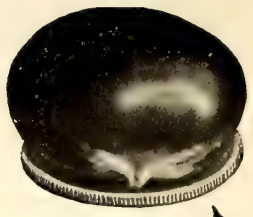
may be treated like gladioli and wintered in paper bags, but will give rather better result if potted and kept slightly moist in a warm position. If cold and damp they will invariably decay at the heart, and, although the bulb may have every appearance of soundness, it will be found to be rotten at the center, and so, of course, worthless. For this reason they should be lifted before touched with frost, or well protected on frosty nights. I have frequently seen it stated that the ismenes were hardy in the open ground; but this is by no means so, few plants being less so, and I do not think that any protection would make them hardy at the North.

CRINUMS

may be wintered in a warm cellar and be much benefited by the rest they thus obtain. They should not be allowed to go dust-dry, but no more water than is really necessary should be given, as it will encourage growth when the plant should be resting; and it is on the completeness of this season of rest that the flowering for the next season depends. Often the first sign of growth will be the appearance of buds; when these appear the plants should be brought up and given a warm, sunny place and plenty of water. Amaryllis require the same treatment, and the more completely they may be induced to die down and rest the better will it be for the plant and its subsequent blossoming.

Atamascos, spider liles, cooperias, bessera elegans, milla bifloras and like bulbs may be lifted, dried off and wrapped in waxed paper placed in paper bags in a warm, dry closet or drawer until wanted the following spring, or they may be covered with dry sand or earth and wintered on a shelf in a warm cellar.

Grow Chestnuts Like This For Profit



Covers a 50c. piece.

Whether you have one acre, or a hundred, you can get bigger profits per acre from Sober Paragon Chestnuts than from any other crop you could plant.

Hardy, rapid, symmetrical growth; luxuriant foliage; spreading boughs; clean trunk; stateliness; immunity from parasitic blight—

These qualities have been combined and developed by science to a degree that closely borders perfection, in the new

SOBER PARAGON

Mammoth, Sweet Chestnut

A single crop, Fall of 1908, brought $30,000 (5,000 bushels @ $6.00 a bushel). And that orchard was only ***7 years old.***

The only large ***sweet*** chestnut in the world.

United States Pomologist, G. B. Brackett, says "The Sober Paragon comes the nearest in quality to the native chestnut of any of the cultivated varieties that I have examined. It is of large size, fine appearance and excellent flavor."

The Sober Paragon bears the second year—a 5-year old tree grew 500 burrs in 1 year. The nuts average 1 to 2 inches in diameter—and 3 to 5 nuts in a burr.

We offer 3 to 5-foot grafted trees for delivery Fall, 1909, and Spring, 1910. ***Orders being booked now.***

Testimony from growers, commission merchants, Forestry Experts, etc., given in our free booklet, together with prices and particulars.

We own exclusive control of the Sober Paragon. This copyrighted metal seal is attached to every genuine tree, when shipped.

Write today for the booklet. Address "Desk D."

GLEN BROS, Nursery, Sole Agents,
ROCHESTER, N. Y.

STEWART Iron Fence

Will beautify your grounds and furnish the desired protection at less expense than any improvement that can be made.

Combines dignity, symmetry, ornamentation and durability.

Backed by 25-years' experience, an established reputation, facilities of production, patents and special features that place it far in advance of all others.

Stewart's is synonymous with quality and is specified by leading architects.

Original designs in harmony with house and grounds is our specialty.

Catalogue, estimates and suggestions cheerfully supplied.

Agents Wanted

THE STEWART IRON WORKS CO.
1726 Covington St., Cincinnati, O.
The World's Greatest Iron Fence Works

Too Nice to be Without "FURNITURE"

The only magazine of its kind in the world. Tells how to distinguish *furniture of character* from the common and unworthy kind, illustrates the best modern interpretations of the old masters. "FURNITURE" is not a technical magazine. It is written for the users of good furnishings, profusely illustrated with the latest designs, contains valuable and interesting information on a subject each lover of the correct and beautiful in the home will revel in.

60 pages 9 in x 13 in

Published quarterly at $1.00 the year Send 35c. for sample copy which will be credited on yearly subscriptions if you wish.

GRAND RAPIDS FURNITURE RECORD CO.
Publishers, Dept. D, Grand Rapids, Mich.

SECTIONAL
"COME-PACKT"
TRADE FURNITURE MARK

"Seeing is Believing"

$10.50

"Cheap" Mission Furniture is an abomination, but it is no reflection on honest, high-grade furniture that it can be bought for less than half the retail store price—especially when you *know* what you are getting. Our plan of selling "Come-Packt" Sectional Furniture direct from our factory to the user cuts out such useless and heavy selling expenses that our low prices are logical. What is better still, there can be no doubt as to that most important consideration—the *quality*.

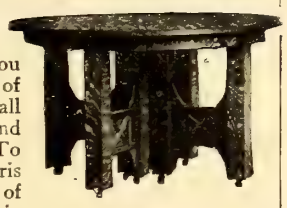
$6.75

You see just what you get—and you get *Quarter* Sawed *White* Oak—rich in beautiful flake and grain. Selected stock of this kind costs twice as much as the plain sawed red or white oak used in most furniture.

No stain disguises cheaper substitutes in our furniture; no defects can be concealed. It comes "in the white"—a solid satisfaction to the most critical, and a big saving in the *cost* to you.

Serving Table
$7.50

The assembling of the finished sections and the application of the stain we send (you can choose from seven kinds) is simple, easy, and a matter of an hour or two at most, depending on the size of the piece. All the hard work is done at our factory—even the holes bored for screws—and you thus have the joy of creation, shorn of all the arduous detail and all the difficulties. To illustrate, the Morris Chair at the head of this article comes in four completed sections.


$17.75, with 3 leaves

The two sides are each entirely assembled, the front rail fitted to slip into the mortised joints, as is also the back rail with hinged back attached. The cushions are all made, ready to drop into place. The Settle is equally simple, and even the massive Dining Table is one of the simplest pieces to put together; there are but five sections.

$12.75

A Tempting Assortment

Over 100 other correctly designed and beautifully proportioned pieces are shown in our 48-page catalog. It will prove fascinating to the lover of artistic Arts and Crafts furniture—it will delight the housewife—and it will please the man who pays the bills. Write us to-day and we will mail a copy free, and tell you of our liberal guarantee that enables us to say "Your money back if you say so." Address

$22.50

$14.50

THE COME-PACKT FURNITURE CO.
Formerly International Mfg. Co.

1039 EDWIN STREET, ANN ARBOR, MICH.

SECTIONAL
"COME-PACKT"
TRADE FURNITURE MARK

SUMMER BLOOMING OXALIS

should be lifted and stored in paper bags after drying off. They may be separated and graded, if desired, and only the finest and largest bulbs saved. These bulbs increase so wonderfully that unless one wishes to engage in the sale of them there is little need of saving the entire crop. One oxalis bulb planted in the spring will produce forty or fifty new bulbs by fall; so if one has planted a hundred bulbs in the spring the result is apt to be overwhelming.

SOME NEW AMERICAN RUGS

SERVICEABLE rugs that are made in our own country are each year coming more and more into evidence. The growing popularity for movable floor-coverings, in place of tacked-down carpets, has inspired the regular manufacturers to new efforts and has also occasioned some interesting experiments with looms and colors. These novelties, many of them, have become standard furnishings for the home.

The revival of the old-fashioned cotton-rug weaving on hand-looms a few years ago was, no doubt, the opening wedge for the creation of rugs of a heavier material, capable of standing greater wear. One of these varieties is

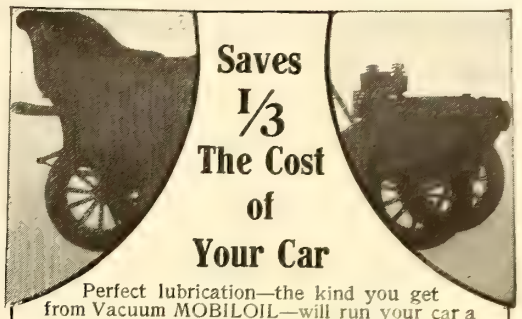
made of wool, requiring four pounds of material for each square yard. Both sides of the rug are alike, and while it can be made as a plain covering for the floor, it is capable of being woven with borders and lines after the fashion of the Navajo Indians.

The advantages of a rug of a solid color is recognized by every home-maker who employs a figurer wall-paper in a room. This is the most general treatment in wall decoration, and to balance effects the plain-color rug is inevitable.

Another reason for a rug of this type is the frequent use of the Mission furniture, requiring for its proper complement on the floor something distinctively appropriate.

Still another modern need is the increased number of summer porches and winter sunparlors that claim a rug suitable for their specific conditions.

The new American wool-rugs are well adapted to each of these needs. Their color-range is varied, and the shades of red, blue, green and brown most artistic. All of the usual stock sizes are found ready-made, and a great many others can be made up on order.



Saves 1/3 The Cost of Your Car

Perfect lubrication—the kind you get from Vacuum MOBILOIL—will run your car a third longer and at a third less expense than if you merely trust to "lubrication," the common, careless, chance-taking kind.

Vacuum
MOBILOIL

is made in 6 different grades, one of which is made for your particular car. It saves you expense and experiment. It protects your car from friction, the hardest, costliest kind of motor wear.

A valuable booklet on motor lubrication will be sent free on application. Lists every automobile made, and shows grade of MOBILOIL necessary for its perfect lubrication. Contains track records up to date, and facts of vital interest to motorists.

MOBILOIL in barrels, and in cans with patent pouring spout, is sold by dealers everywhere. Manufactured by

VACUUM OIL CO., ROCHESTER, N. Y.

Experiment No More

Mixing paints used to be a necessary part of learning the painter's trade.

Now machines do it so much better. The apprentice doesn't have to spend his days experimenting—spoiling whole batches of good paint—or worse still, putting it on improperly prepared.

He insures satisfactory results with

Lowe Brothers
High Standard
Liquid Paint

and saves his time and ***your money,*** for "High Standard" Paint is mixed and ground—ready for the brush—by the finest paint-grinding machinery in America.

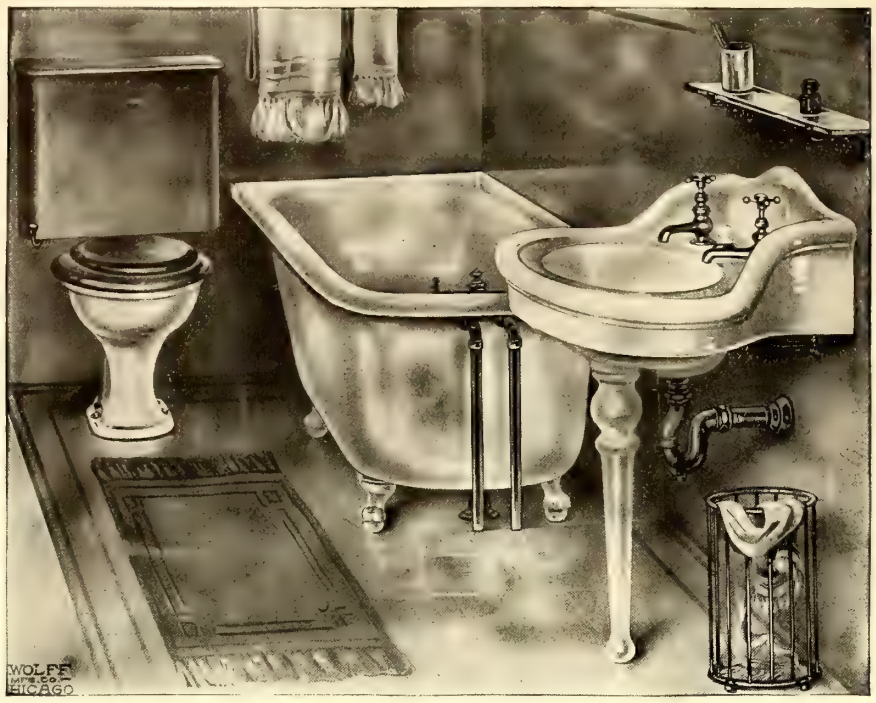
Chemical and scientific tests—the only real tests for materials and methods—based upon years of practical experience, take the place of the hit or miss methods of the painter's hand-made process, leaving to him time and opportunity to develop skill in ***painting.***

During 35 years the "Little Blue Flag" has come to have a definite value on a paint can. It means Assured Quality and is your protection.

There is a "High Standard" paint for every purpose and a line of "Little Blue Flag" Varnishes just as complete—just as sure to satisfy.

Write for booklet "The Owner's Responsibility."

The Lowe Brothers Company
450-456 E. Third St., Dayton, Ohio
Boston New York Chicago Kansas City



FIFTY-FOUR YEARS OF QUALITY

GUARANTEE LABELS

Guarantee labels on enameled ironware are various and are variously translated in practice.

Careful architects have come to understand that it is the spirit behind the guarantee that counts for most after all. The liberal, unquestioning, make-good policy behind every Wolff guarantee is responsible for unvarying Wolff specification as often as is the leadership of Wolff design.

L. WOLFF MANUFACTURING CO.

Established 1855

MANUFACTURERS OF PLUMBING GOODS EXCLUSIVELY

The only complete line made by any one firm

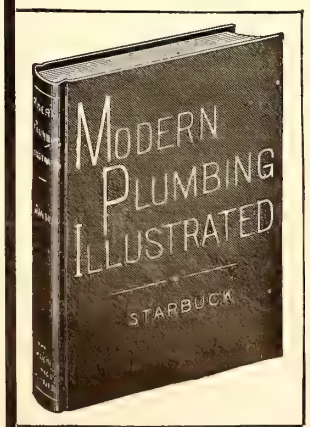
GENERAL OFFICES: 601 LAKE STREET } CHICAGO
SHOWROOMS: 91 DEARBORN STREET }

DENVER TRENTON

BRANCH OFFICES

Minneapolis, Minn.: 615 Northwestern Building
Kansas City, Mo.: 1209 Scarrett Building
San Francisco, Cal.: Monadnock Building
Cleveland, Ohio: Builders' Exchange
Washington, D. C.: 327-328 Bond Building
Buffalo, N. Y.: 77 Richmond Avenue
Omaha, Neb.: 1108-12 Nicholas Street

Modern Plumbing Illustrated



By R. M. STARBUCK

400 (10¼ x 7½) PAGES

55 FULL PAGES OF ENGRAVINGS

PRICE, $4.00

¶ A comprehensive and up-to-date work illustrating and describing the Drainage and Ventilation of Dwellings, Apartments and Public Buildings, etc. The very latest and most approved methods in all branches of Sanitary Installation are given.

¶ Many of the subjects treated in the text and illustrated follow in the next column.

MUNN & CO., Inc., Publishers

Scientific American Office, 363 Broadway, New York

SOME OF THE SUBJECTS TREATED

Connections, sizes and all working data for Plumbing Fixtures and Groups of Fixtures
Traps — Venting
Connecting and Supporting of Soil Pipe
House Trap and Fresh-Air Inlet
Floor and Yard Drains, etc.
Rain Leaders
Sub-soil Drainage
Floor Connections
Roof Connections
Local Venting
Bath Room Connections [etc.
Automatic Flushing for Factories, School Houses,
Use of Flushing Valves
Modern Fixtures for Public Toilet Rooms
Durham System
Plumbing Construction without use of Lead
Automatic Sewage Lift — Sump Tank
Disposal of Sewage of Underground Floors of High Buildings
Country Plumbing
Cesspools
The Electrolysis of Underground Pipes
Septic Tanks and Sewage Siphons
Pneumatic Water Supply, Rams, etc.
Examples of Poor Practice
Roughing — Testing
Continuous Venting for all classes of Work
Circuit and Loop Venting
Use of Special Waste and Vent Fittings
Cellar Work
House Drain— House Sewer — Sewer Connections
Plumbing for Cottage House
Plumbing for Residence
Plumbing for Two-Flat House
Plumbing for Apartment Houses
Plumbing for Office Building
Plumbing for Public Toilet Rooms
Plumbing for Bath Establishment
Plumbing for Engine Houses
Plumbing for Stables
Plumbing for Factories
Plumbing for School Houses, etc. [by Electricity
Thawing of Underground Mains and Service Pipes

When a perfectly plain floor-covering is required, no border is woven across the short ends, but a seamless rug in one tone is made up to a 12 x 12 foot size. (This large rug in any of the deeper tones gives a particularly handsome appearance in a commodious-sized room.)

If such a coloring is too plain, a border of contrasting colors is woven near the ends in wide and narrow stripes.

When a set of small rugs is required to fit unequal spaces, a group of these rugs woven alike gives unusual charm to a room, whether it be in a country-home that is used all the year round, or a simple bungalow that is occupied only for vacation days and week-ends.

Besides the attractive colorings that form a large measure of the merit of these American rugs, there is a special kind made of camel's-hair in the natural color that is designed for outdoor wear in the country. Such a rug as this made a comfortable foothold in a garden-house where it was exposed to the weather, without showing the dust and dirt that was naturally brought into such a place.

This latest type of American rug has, in fact, so many advantages for real use and attractive quality that one needs not now depend on our foreign importations.

NEW BOOKS

WILD FLOWERS EVERY CHILD SHOULD KNOW. By Frederic William Stack. New York: Doubleday, Page & Co. Pp. 15+411. Price, $1.20.

A thoroughly useful book. The author rightly states that it dose not require a preparatory course nor any special instruction to become acquainted with the more common wild flowers and their individual traits, and then proceeds to show how this knowledge may be acquired in a very direct and simple manner. The book is not a "child's book" in the common acceptation of the word, but is an elementary treatise on plants, very carefully prepared, admirably condensed and eminently useful in its plan and arrangement. The key to the subject, as Mr. Stack presents it, is the color of the flower, all the plants described being grouped under their own colors. Identification is thus reduced to the simplest method, and the whole kingdom of wild flowers is easily opened to the beginner. It is a book some older folk will like, too, and find exceedingly useful.

THE STUDIO YEAR-BOOK OF DECORATIVE ART, 1909. New York: John Lane Company. Pp. 163 . Price, $3.00; postage, 35 cents.

A new system of presentation has been chosen in the preparation of this annual volume. Descriptions of the objects illustrated are omitted, and instead there are given brief biographical notices of the various artists whose craft work has been chosen for publication. It is interesting to know who these people are, where they live and what have been their most notable achievements; yet, in a work of this sort there is ample room for descriptive notes, information as to color and material and the like that is missing from the present volume.

But the creative value of this annual review is still at the high-water mark set by earlier issues. The illustrations are most abundant, and cover many forms of decorative art. It is, in short, a most impressive survey of the progress of modern art, and designers and art lovers may well regard it as indispensable. The volume is beautifully printed, and the illustrations include many exquisite plates in color. It is a book that cannot well be too highly commended.

Colonial Designs

IN the selection of hardware trimmings for a Colonial house, harmony should prevail between hardware design and architectural style. The new-old-fashioned knocker and door-latch here illustrated are splendid examples of the appropriateness and unusual excellence of

Sargent's
ARTISTIC
Hardware

for homes of the Colonial type. The latch and cylinder lock also show how modern security and convenience can be combined with old-fashioned appearance.

Besides nearly a score of Colonial patterns, Sargent's Hardware is made in designs to harmonize with all periods and schools of architecture—for interior and exterior.

If you are building, get

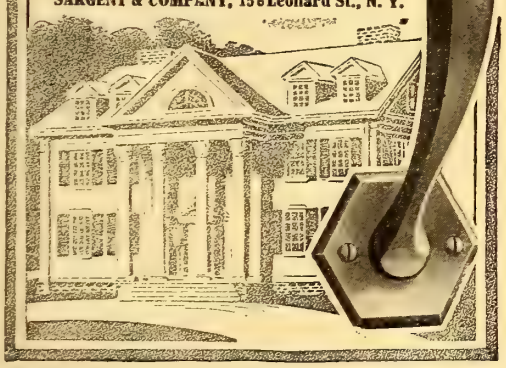
Sargent's Book of Designs Sent FREE

Illustrates and describes nearly eighty varieties of hardware.

The Colonial Book

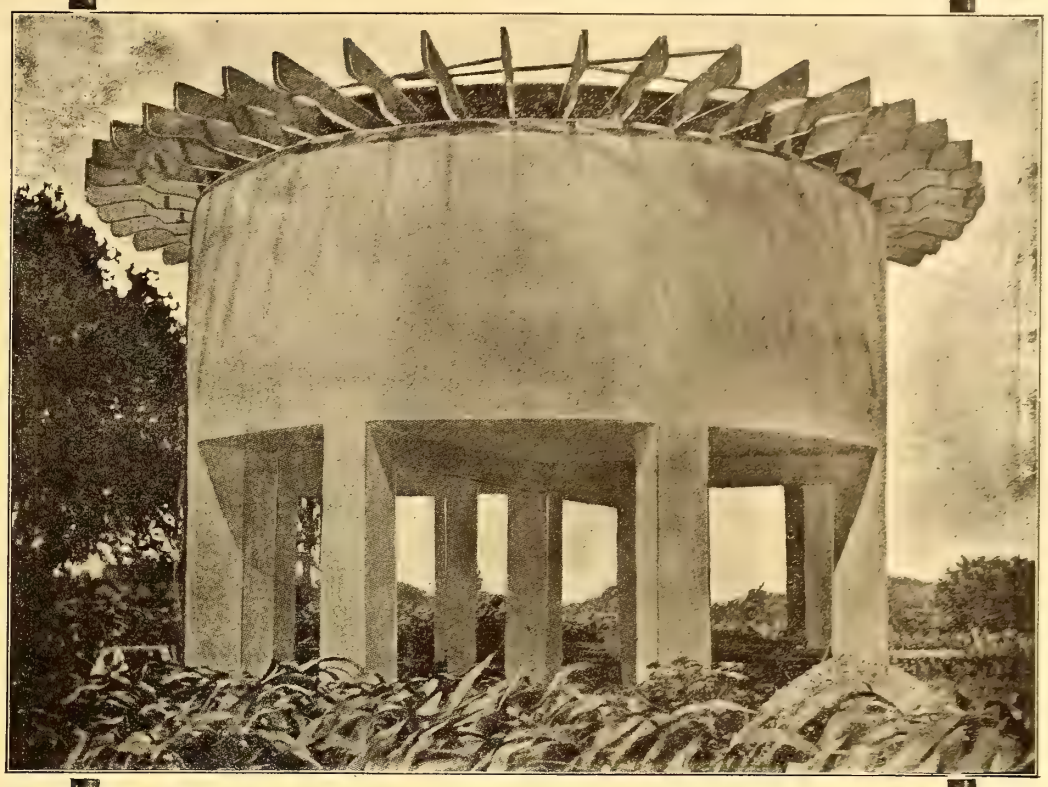
—also free—shows Cut Glass Knobs, Door Handles, Door Knockers and other fittings adapted for a Colonial house. Write for the books to-day, addressing

SARGENT & COMPANY, 156 Leonard St., N. Y.



FLOORS

ROOFS



A concrete tank erected on estate of Edmund Tatham, Katonah, New York

Frederick J. Sterner, Architect - - New York
De Lancey A. Cameron, Builder - - New York

Tank designed for storage supply of 15,000 gallons, built entirely of concrete reinforced with Clinton welded wire. Before roof was placed over tank, and during winter months, ice 10 inches thick formed on water stored therein. No cracks or leakage have developed.

Clinton Wire Cloth Company
CLINTON, MASS.

Ceilings

Partitions

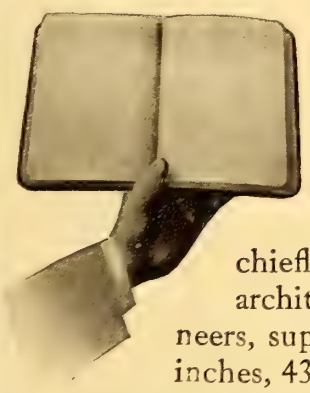
Fireproofing Departments:
ALBERT OLIVER, 1 MADISON AVE., NEW YORK

WASHINGTON: Rosslyn Supply Co., Colorado Building
CHICAGO: Clinton Wire Cloth Co., 30-32 River Street
BUFFALO, N. Y.: Buffalo Wire Works Co., Inc
CLEVELAND, OHIO: Carl Horix, 428 Garfield Building
ST. LOUIS: Hunkins-Willis Lime & Cement Co.
SAN FRANCISCO: L. A. Norris, 835 Monadnock Bldg
SEATTLE: L. A. Norris, 909 Alaska Building
SYRACUSE, N. Y.: National Construction Company

JUST PUBLISHED

The New Building Estimator

BY WILLIAM ARTHUR

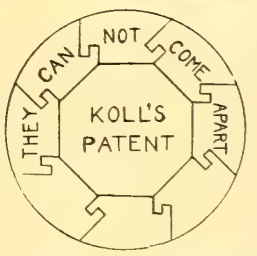


A PRACTICAL guide to estimating the cost of labor and material in building construction from excavation to finish, with various practical examples of work presented in detail, and with labor figured chiefly in hours and quantities. A hand-book for architects, builders, contractors, appraisers, engineers, superintendents and draftsmen. Size, 4¾x6¾ inches, 437 pages, cloth bound. Price, $2.50 postpaid

AN INDISPENSABLE AID TO CONTRACTORS

A circular describing this book will be mailed on application
MUNN & CO., Inc. 361 BROADWAY, NEW YORK

Koll's Patent Lock-Joint Columns



The Best for Pergolas, Porches or Interior Use are made exclusively by

Hartmann - Sanders Company

Elston and Webster Avenues
CHICAGO, ILL.
Eastern Office, 1123 Broadway
NEW YORK

Send for Catalogue A-19 of Columns, or A-29 of Sun-dials, Pedestals, etc. (See also "Sweet's Index.")

Baker Electric Vehicles

The Aristocrats of Motordom

The Electric That Meets Every Need of the

Society Woman

YOU can learn to run The Baker in twenty minutes. It far exceeds all other electrics in simplicity, safety, as well as mileage and speed. It is noiseless and clean—having a battery capacity of 70 to 100 miles. It is unequaled for city and suburban use.

WRITE FOR OUR HANDSOME BOOKLET

It clearly explains the many advantages of Baker Electrics, and gives full information regarding the elegant 1910 Model Coupes, Broughams, Victorias, Landaulets, Runabouts, Roadsters, etc.

THE BAKER MOTOR VEHICLE COMPANY, 55 WEST 80TH STREET, CLEVELAND, OHIO.

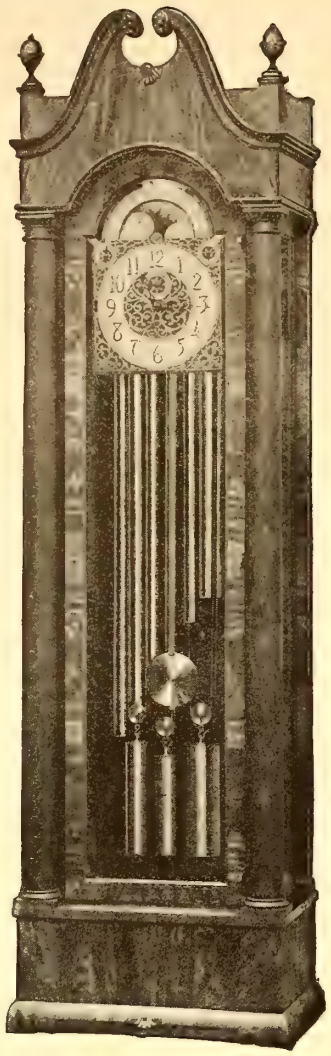
Salesrooms in the Principal Cities

Vol. VI NOVEMBER, 1909 No. 11

fNA
7100
A512
Hort.

AMERICAN HOMES AND GARDENS

$3.00 A YEAR MUNN & CO., INC., Publishers PRICE, 25 CENTS



HALL CLOCKS

Our line comprises the finest and most complete designs of high-class clocks on the market. Our movements are superior in nearly every detail and the purchaser is assured that he can buy the best by ordering a "Waltham."

We will soon have ready for delivery, our new Chiming Movement which chimes either Westminster, Whittington or St. Michaels.

Our "Willard" or Banjo Clock is a model of perfection and appeals to those who desire a first-class article in every respect.

If your local dealer does not sell our line, send direct for illustrated catalogue.

Waltham Clock Company
Waltham, Mass.

Erected for Howard Gould, at Castlegould, L. I.

You're Fond of Flowers?

Then why not have them all Winter?

A greenhouse will be one of the greatest pleasures you ever put your money in—and a lasting pleasure at that.

Flowers whenever you want them, either potted or cut—and fresh, crisp vegetables. A place to delightfully work off a little surplus energy and time. It doesn't necessarily have to be a large house—just large enough to look after yourself, if you want to.

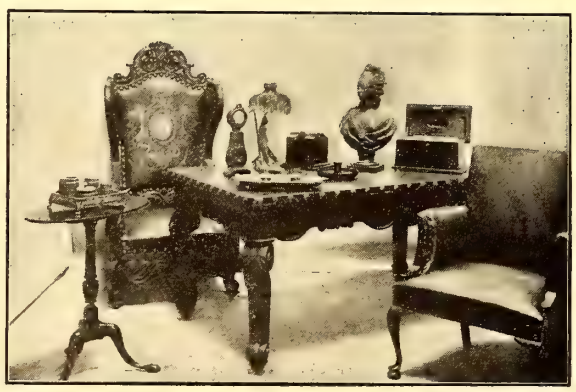
May we send you some interesting information on the subject?

Hitchings & Company

Designing and Sales Offices
1170 BROADWAY, NEW YORK

General Offices and Factory
ELIZABETH, N. J.

FLINT'S FINE FURNITURE



USEFUL HOLIDAY GIFTS

Those who put thought into their Holiday shopping appreciate that gifts of real and lasting value are those which contribute to the Comfort as well as the Beauty of one's daily surroundings.

Such are the Useful Holiday Gifts now displayed in almost endless variety throughout our ten spacious floors. Nowhere else can there be found such a collection of Gift Articles, combining Artistic Distinction with Practical Utility.

IMPORTED NOVELTIES in exclusive designs: Electroliers, Clocks, Bronzes, Objects of Art, Smoking Sets, Cigarette Boxes, Sewing Tables, Book Blocks and a host of useful articles.

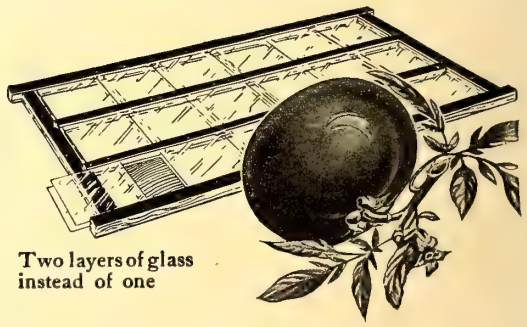
Every piece is marked in plain figures and comparison with best values obtainable elsewhere is specially invited.

The freedom of inspection without obligation to purchase is cordially extended at all times.

Selections will be held for specified delivery dates and our system of packing insures absolute safety to your purchase.

GEO. C. FLINT CO.

43-47 WEST 23rd ST. 24-28 WEST 24th ST.



Two layers of glass instead of one

Try the Sunlight Sash for Tomatoes

R. Effinger, Jeffersontown, Ky. writes: "I bought 20 Sunlight Sash and have given them a thorough trial. I never lost a plant from frost or freezing, although I never used any covering even during zero weather."

The man who grows to sell has tested the Sunlight Double Glass sash and found that it pays for itself in a single season.

You will get such remarkable results that you will *double your beds.*

The Sunlight Sash makes your plants as safe in zero weather as in the open air in May. The dry air between the two layers of glass is *better* protection than mats or boards. Never needs covering.

You can handle your beds in half the time.

Write for catalog and freight prepaid proposition. Fast freight, safe delivery guaranteed. Order now.

Agents Wanted—The wonderful success of Sunlight Sash makes it a good paying proposition to agents. 75% of our trial orders last year re-ordered this year in lots ranging from 5 to 100 sash. Write for your territory today.

SUNLIGHT DOUBLE GLASS SASH CO.,
943 East Broadway, Louisville, Ky.

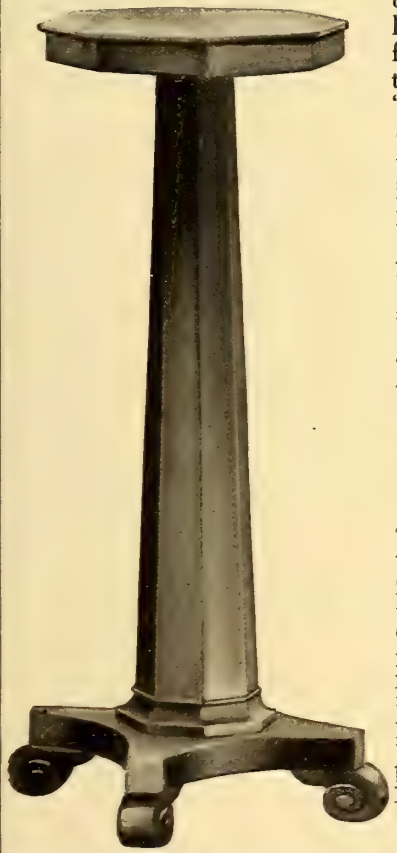
SUNLIGHT Double Glass Sash TRADE MARK
for Hot-beds and Cold-frames

SMITHSONIAN
AUG 12 1985
LIBRARIES

One of The New Reproductions For Lovers of "ODD-BIT FURNISHING"

THE "SHAWMUT PEDESTAL"—Price $20.

THE NEW FASHION OF FURNISHING the Living Room or Drawing Room with individual Chairs, Tables, Pedestals and things—like the parlour of Ursa Major, Ursa Minor and Ursa Minimum, in the story "Little Goldenlocks and the Three Bears"—is becoming so vastly popular that the many votaries of this delightfully human sort of Odd-Bit Furnishing will appreciate the opportunity to secure this charming Pedestal for Bric-a-Brac or Statuary, at such a very little price, for a piece of Furniture subject to these specifications, which we quote from our catalogue-folio "FOREFATHERS' FURNITURE":—



The "Shawmut" Bric-a-Brac Pedestal
No. D342—Price $20.00.

"American-Empire Colonial. To most people there is something very agreeable about an octagon shape. This perhaps accounts for the popularity of this typically Colonial piece. It looks staunch enough to support the heaviest statue or vase, which is another attraction to the eye. It is staunch and steady enough to bear a very heavy weight, and this, combined with its rich mahogany, in medium dark color and egg-shell finish, added to its exceptionally low price, makes it attractive to the pocket-book. Width at bottom 14½ inches; Height, 37 inches; Dimensions at top 13 x 13 inches."

The folio "FOREFATHERS' FURNITURE" will be sent to responsible adults as well as

These Additional Catalogs of HOME-FURNISHINGS

Without Charge — Carriage Paid

The catalogue-folios "Palatial Furniture," "Handcraft Furniture," "Modern Furniture," "Metal Beds," "Hygienic Bedding," "Pianos," "China and Glass" and "Housekeeping Linens."

Our Decorative Advisory Bureau will also, on receipt of blueprint, and without charge, submit by mail, suggestions, samples, color-schemes, and estimates, for full furnishing of rooms.

If you have not yet received the little travelogue of the Wanamaker Stores, entitled the "GUIDE BOOK," it would be well to write for it now, before the edition is exhausted. FREE on request. Section B.

JOHN WANAMAKER
New York

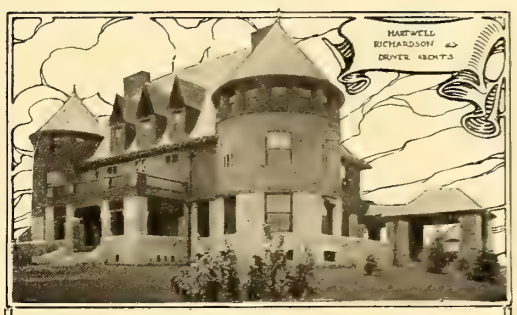
AMONG the distinctive features of interior decorations found in many old mansions are the delicately wrought lighting fixtures in perfect harmony with their surroundings.

THE ENOS COMPANY

Makers of Lighting Fixtures

OFFICE AND FACTORY: Seventh Ave. & 16th St.
SALESROOMS: 36 West 37th St.
NEW YORK

BOSTON — *H. F. Esterbrook, Inc., 9 Park St.*
BALTIMORE — *519 N. Charles Street*
PITTSBURG — *G. P. Norton, Century Building*
ST. LOUIS — *N. O. Nelson Mfg. Co.*
PORTLAND, ORE. — *J. C. English Co., 128 Park St.*
CHICAGO — *W. K. Cowan & Co., 203 Michigan Boulevard*
SAN FRANCISCO — *1748 California Street*
TORONTO — *94 King Street, West*
SPOKANE — *Cutter & Plummer, Inc.*
SEATTLE — *Cox & Gleason, 1914 Second Ave.*



DAMP **PETRIFAX** RESISTING

Interior and Exterior Coating for Brick, Concrete or Cement.

"If the Coat Fits, Put It On"

DEXTER BROTHERS' English Shingle Stains

produce soft even shades in Moss Greens, Tile Reds, and Beautiful Silver Grays. *Write for Catalogue and Samples.*

DEXTER BROTHERS CO.
105 Broad Street, BOSTON
Branch Office, 542 Fifth Avenue, NEW YORK

AGENTS: H. M. Hooker Co., 651 Washington Blvd., Chicago; John D. S. Potts, 218 Race St., Philadelphia; F. H. McDonald, 619 The Gilbert, Grand Rapids, Mich.; F. T. Crowe & Co., Seattle, Spokane, Tacoma, Wash., and Portland, Ore.; M. D. Francis, Atlanta, Ga.; F. S. Coombs, Halifax, N. S.

Sample and Circular Free

A House Lined with Mineral Wool

as shown in these sections, is ***Warm in Winter, Cool in Summer,*** and is thoroughly DEAFENED.

The lining is vermin proof; neither rats, mice, nor insects can make their way through or live in it. MINERAL WOOL checks the spread of fire and keeps out dampness.

CORRESPONDENCE SOLICITED

U. S. Mineral Wool Co.
140 Cedar St., NEW YORK CITY

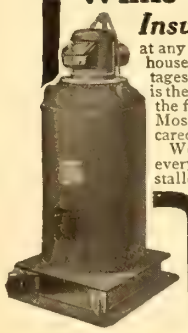
Antiques

Photographs and descriptions of genuine antique pieces sent on request. List your wants of antiques with me.

RALPH WARREN BURNHAM
IPSWICH IN MASSACHUSETTS

Wilks Hot Water Heaters

Insure Even Temperature



at any desired degree the year around in green houses, poultry houses, barns, garages, cottages, etc. Wilks' improved coal magazine, is the only one that regulates itself and keeps the fire 10 hours—saving need of night firing. Most economical in use of fuel, and as easily cared for as a kitchen range.

We guarantee satisfactory results from every heater recommended by us and installed according to our directions.

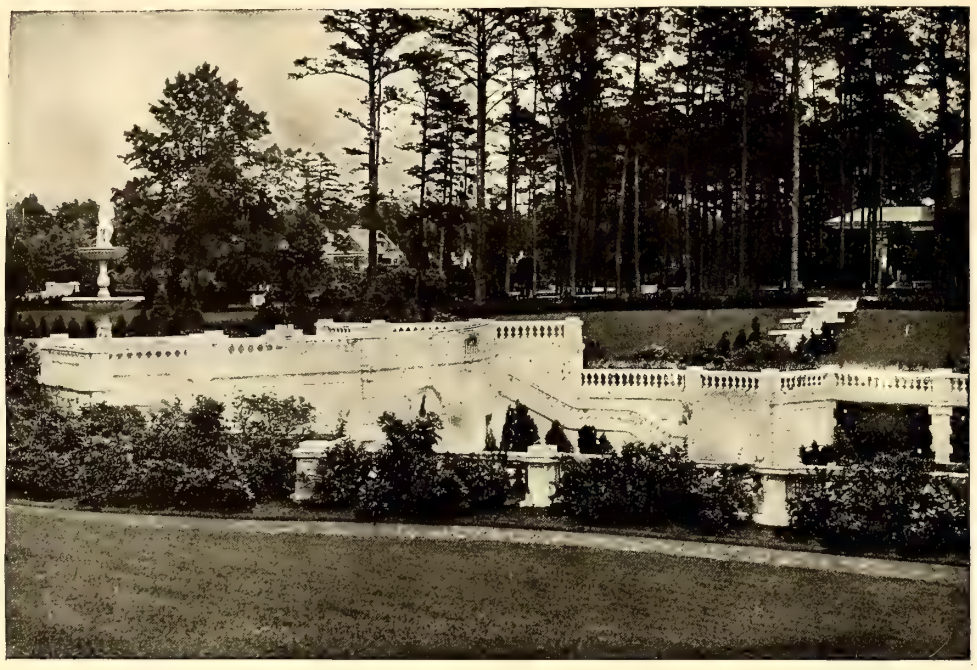
Write for Book giving sizes, price list, description, etc., and tell us what you want a heater for. We will advise you what to get and furnish specifications for setting up

S. WILKS MANUFACTURING CO.
3574 Shields Avenue, Chicago.

American Estates and Gardens

By BARR FERREE

Editor of "American Homes and Gardens," Corresponding Member of the American Institute of Architects and of the Royal Institute of British Architects



4to. 11x13½ inches. Illuminated Cover and 275 Illustrations. 306 Pages.

Price, $10.00

A sumptuous book, dealing with some of the most stately houses and charming gardens in America. The illustrations are in nearly all cases made from original photographs, and are beautifully printed on double coated paper. Attractively bound. The book will prove one of the most interesting books of the year and will fill the wants of those who desire to purchase a luxurious book on our American Homes.

Munn & Company
INC.,
Publishers of "Scientific American"
361 BROADWAY, NEW YORK

THE NEW AGRICULTURE

By
T. BYARD COLLINS

8vo. Cloth. 376 Pages
100 Illustrations
Price, $2 00, Postpaid

THIS new and valuable work sets forth the changes which have taken place in American agricultural methods which are transforming farm life, formerly so hard, into the most independent, peaceful and agreeable existence. Farm life to-day offers more inducements than at any previous period in the world's history, and it is calling millions from the desk. The present work is one of the most practical treatises on the subject ever issued. It contains 376 pages and 100 illustrations.

In brief, the Contents are as follows:

CHAPTER I. This chapter contains a general statement of the advantages of farm life.

CHAPTER II. Deals with the vast systems of irrigation which are transforming the Great West, and also hints at an application of water by artificial means in sections of the country where irrigation has not hitherto been found necessary.

CHAPTER III. Gives the principles and importance of fertilization and the possibility of inoculating the soil by means of nitrogen-gathering bacteria.

CHAPTER IV. Deals with the popular awaking to the importance of canals and good roads, and their relation to economy and social well-being.

CHAPTER V. Tells of some new interests which promise a profit.

CHAPTER VI. Gives a description of some new human creations in the plant world.

CHAPTER VII Deals with new varieties of grain, root and fruit, and the principles upon which these modifications are effected and the possibilities which they indicate.

CHAPTER VIII. Describes improper methods in agricultural practice.

CHAPTER IX. Devoted to new machinery by which the drudgery of life on the farm is being eliminated, making the farm a factory and the farmer the manager of it.

CHAPTER X. Shows the relation of a body of specialists to the American farmer, who can have the most expert advice upon every phase of his work without any expense whatever to himself.

MUNN & CO., INC., Publishers 361 Broadway, NEW YORK

INFORMATION FOR OWNERS

OWNERS today are informing themselves on the subject of bathroom fixtures. They find it helps them to intelligently plan with their architect and plumber. The result is a more complete and appropriate equipment, bought on the basis of permanent VALUE—not merely on initial cost.

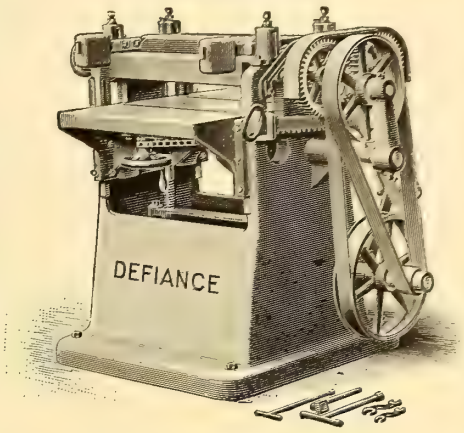
"Modern Plumbing" Our booklet "Modern Plumbing" is a condensed and practical handbook on the subject. It shows 24 interior views of model bathrooms ranging in cost from $85 to $3,000. It suggests where to use Imperial Solid Porcelain, Vitreous Ware or Enameled Iron to the best advantage and gives illustrations with cost of individual fixtures in each material. There are also helpful hints on decoration and tiling.

THIS BOOKLET will give you a new idea of the possibilities of bathroom equipment. Sent on request, with 4c. to cover postage.

THE J. L. MOTT IRON WORKS
1828 OVER EIGHTY YEARS OF SUPREMACY 1909
FIFTH AVENUE AND SEVENTEENTH STREET
NEW YORK CITY

BRANCHES
Boston, Chicago, Philadelphia, Pittsburgh, Detroit, Minneapolis, Washington, St. Louis, New Orleans, San Francisco, San Antonio, Atlanta, Seattle, and Indianapolis.
CANADA: 83 Bleury St., Montreal

"DEFIANCE"
Wood-Working Machinery
For Pattern Shops and General Wood Work
Invented & Built by
THE DEFIANCE MACHINE WORKS
DEFIANCE, OHIO



24-Inch Single Surface Planer

From Our No. 3 Book

GOING TO BUILD?
GET OUR BOOKS OF
RESIDENCE DESIGNS

No. 1. 25 Residences, cost $1,500 to $5,000 ..... $ .50
No. 2. 25 Residences, cost $5,000 to $20,000 ..... 1.00
No. 3. 25 Concrete Residences 1.00

HIGH-CLASS PLANS AT MONEY-SAVING PRICES
Remember—No extras are added to our first price!
Photographic cuts of 2-Flats, Schools, Churches, etc., 10 cents each.
We enter large competitions submitting perspectives in Monochrome, Pen-and-Ink and Water Colors. **Write us now.**

Arthur G. Lindley Co., Architects
SCHENECTADY, N. Y.

If you wish the **ideal covering** for **WALLS, CEILINGS, WAINSCOTS,** in the Bathroom, Hall and Vestibule, **investigate**

Enametile
THE NEW TILE

Enametile is flexible metal, enameled and embossed, to reproduce perfectly the **finest encaustic** and **ceramic tiling** at **only** one-sixth to one-half the cost.

Enametile is *easily* and *quickly* applied, and is conveniently kept clean with sponge or damp cloth. **Enametile** is water-proof, dust-proof, vermin-proof. **Enametile** neither cracks, breaks nor loosens.

Enametile is *not only* as *beautiful* in design and coloring as the most expensive tiles, but its highly enameled surface being embossed, throws its rich, mellow tints into high relief, and produces an effect which cannot be achieved with any other form of tiling or any other wall-covering. **Enametile** combines this *highly artistic effect* with *great durability.*

If you investigate Enametile because of its **economy** and **durability** you will buy it because of its **beauty.**

Send for Handsome Art Portfolio showing many designs of **Enametile** in original colors. Plans, estimates sent you direct, your contractor or your architect.

NEW YORK METAL CEILING CO.
544 W. 24th Street, New York City

Manufacturers of **Metal Ceilings** for **Residences, Business** and **Public Buildings.** Full information and catalogue to those interested.

THE **most modern, and best illuminating and cooking** service for isolated homes and institutions, is furnished by the **CLIMAX GAS MACHINE.**

Apparatus furnished on **TRIAL** under a **guarantee to be satisfactory** and in advance of all other methods.

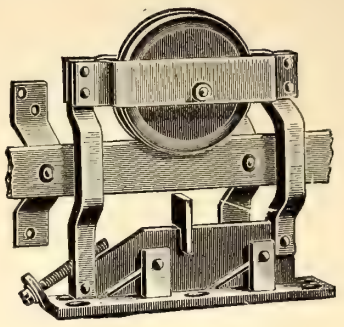
Cooks, heats water for bath and culinary purposes, heats individual rooms between seasons—drives pumping or power engine in most efficient and economical manner—also makes brilliant illumination. **IF MACHINE DOES NOT MEET YOUR EXPECTATIONS, FIRE IT BACK.**

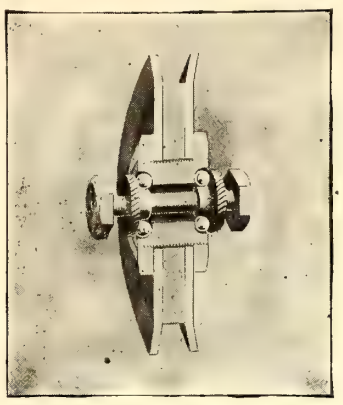
Send for Catalogue and Proposition.

Low Price Better than City Gas or Electricity and at Less Cost.
Liberal Terms

C. M. KEMP MFG. CO.
405 to 413 E. Oliver Street, Baltimore, Md.

LANE'S BALL-BEARING





IS THE

BEST HOUSE-DOOR HANGER MADE

Other Styles for Less Money Send for Catalog
Sold by Hardware Trade

LANE BROTHERS COMPANY
434-466 Prospect Street POUGHKEEPSIE, N. Y.

Refinish a Piece of Your Furniture at Our Expense

Let Us Send the Materials FREE

Let us show you how to make old furniture look like new, how to rejuvenate shabby floors, how to refinish the woodwork in any shade to suit your individual taste. You can do it so easily that we want you to make the test at *our expense* to prove it.

These Materials Are Yours—FREE—for the Asking

May we mail a package to *you?*

No doubt you have some piece of furniture that you prize highly, yet you do not use on account of its worn condition, or because it does not harmonize with other furniture or decorations.

—Use Johnson's Electric Solvo to quickly remove the old finish.

—Use Johnson's Wood Dye to color the wood any one of 14 shades—choose from list below.

—Use Johnson's Prepared Wax to impart that beautiful "hand-rubbed" effect.

The book will tell you how in every case, and will show you how to carry out other decorating ideas you may have in mind.

From this test and this book, you will learn how many opportunities you have of beautifying the home by using—

Johnson's Wood Dye

Made in 14 Standard Shades:

No. 126 Light Oak	*No. 130 Weathered Oak*
No. 123 Dark Oak	*No. 131 Brown Weathered Oak*
No. 125 Mission Oak	*No. 132 Green Weathered Oak*
No. 140 Manilla Oak	*No. 121 Moss Green*
No. 110 Bog Oak	*No. 122 Forest Green*
No. 128 Light Mahogany	*No. 172 Flemish Oak*
No. 129 Dark Mahogany	*No. 178 Brown Flemish Oak*

Please send me sample of Johnson's Wood Dye, Shade No. ..... Electric Stain and Prepared Wax. Also Free Book Edition AH-11.

Name .....

Address .....

Please Use This FREE COUPON

Johnson's Wood Dye is not a mere stain—not simply a surface dressing. It is a penetrating dye, sinking deep in the wood fiber, fixing a rich color.

Johnson's Prepared Wax adds a top dressing of subdued luster. It does not catch or hold dust. It does not show scratches or heel marks.

The trial packages will demonstrate these facts to you.

Use the coupon. Cut it out now, while you think of it, and mail at once.

Good dealers distribute these Johnson samples, too. Ask yours for a package.

S. C. Johnson & Son
Racine, Wisconsin
"Wood Finishing Authorities"

OUR NATIVE PERSIMMONS

By E. P. Powell

OUR native persimmon remains a neglected fruit, notwithstanding the fact that the Japanese persimmon has become very popular. In my judgment a thoroughly good native is more eatable than the foreign. There are some varieties already selected and grown by our best horticulturists, and yet very little has been done in the way of cross-breeding and improving the fruit. Mr. Miller, secretary of the Missouri Horticultural Society, some years ago sent me scions of a few sorts that he had collected and named. One of these was almost seedless, but it has not proved as ready to take care of itself in this climate. The variety which has proved of most value to me is the same as that which is now propagated by Mr. Munson, at Denison, Texas, and named by him the Honey persimmon. Mr. Miller sent it to me under another name. It is a most delicious fruit, about one and three-quarters inches in diameter, and slightly flattened in shape. It ripens about the last week of October in this climate, and in 1908 it surpassed all the persimmons that I ever tasted.

The best way for growing this fruit is to plant seeds of any stock you may have at hand. The seedlings will most of them be fruitless, although they will blossom, but they will make admirable stock in which to insert chosen scions. They are equally good for Japanese and native scions. If your home is below the Ohio, try the Japanese; but in New York State, which is my summer home, the Japanese sorts are all too tender. You must bear in mind that the persimmon starts its growth quite late in the season, and your grafting must be done relatively later than apples, as apples must be grafted later than plums. The tree without fruit is a beauty, and about the right size for a common lawn. The barren sorts will be admirable for our streets, and if planted in large numbers they might be grafted; that is, we must have enough of them to satisfy the boys. The limbs are brittle and will not stand much climbing or pounding.

In 1907, and in that year only, the persimmon failed to ripen into sweetness. As a rule, the tree will be loaded with its golden balls. The fruit does not need the help of frost, as people frequently say. In fact, a severe freezing very much injures the quality of the persimmon. The early sorts become very sweet and soft before any frost whatever, and then fall from the tree if not picked. The later sorts hang on into the winter, and may be picked as late as January or February in a frozen state. Thaw them out slowly and they make very good eating. The squirrels are very fond of the fruit that remains till they come out in the spring.

The pawpaw of our river bottoms in Ohio and Indiana (and I have found them also in Southern Michigan) should be propagated along with the persimmon. The tree never grows more than about fifteen feet high and inclines to a weeping form when fully grown. The fruit is the size of a very small banana. Like the persimmon, it is pretty full of seeds only the fruit is so delicious that we can tolerate the presence of a half dozen lima beans. What I write these notes for is to suggest a general effort to improve these two fruits and get rid of a large part of the seeds. This can be done by selecting the best stock, sowing the seed, and then rejecting the poorest results. In the course of half a dozen generations of plants we shall reach something of importance. Of course, this will need a good deal of time and patience, and we must teach our children to carry on the experiment.

THE ALTERATION OF THE COLORS OF FLOWERS BY CULTIVATION

By Prof. F. Hilderbrand

IN GENERAL, all the flowers of the same species, in the wild state, have the same color. For example, all plants of crowfoot or buttercup and dandelion have yellow flowers. In a few species, different colors are found. For example, the flowers of the milkwort (*Polygala vulgaris*) may be blue, violet, red, or white. Much greater variation is shown by cultivated plants. In these the variation of color of the flowers appeared long ago, but in recent years many new colors have been produced which had either not hitherto been observed, or which, if they did appear occasionally, were not selected for preservation and development. The floriculturists of the present day carefully observe and endeavor to fix every new shade, even, if it is not particularly beautiful, for the desideratum is novelty, and there is no telling what will please the popular taste. But in these attempts to obtain new colors in flowers, the propagator is entirely dependent upon the innate predisposition of the particular species with which he is working. He can by no means obtain every desired color. In the following sketch will be mentioned, first, a few cases of species in which a color has been obtained, which was formerly considered impossible. Some other examples will be adduced to show that in certain species a great many new colors and shades, but not all colors, have been obtained. Finally, a few other cases will be quoted in which the flowers of a species have shown little or no variation in color during many years of cultivation.

A species of primrose (*Primula acaulis*) in the wld sitate always has lemon yellow flowers which vary only slightly in tint. Cultivation has produced both lighter and darker shades, but, until recently, no color but yellow. Hence, it was the more surprising when, a few years ago, a pure blue variety was produced, which has since retained its general color, but has developed all shades, from the palest sky-blue to the deep blue of the corn-flower. The Chinese primrose (*Primula sinensis*), when cultivated in the garden, bore until recently only red and white flowers. In this species, also, other colors have lately been produced, not only violet but also blue, though not so pure a blue as that of the species first mentioned. Another example is offered by the gladiolus, which formerly bore only white and red flowers but has recently developed a blue-flowering variety. A case of a somewhat different character is presented by the asters, which have long shown a great variety of colors, but in which recently a great many new shades have been produced, including some which would not at one time have been considered beautiful, for example, copper-color.

Very numerous, on the other hand, are the species which have long shown great variation in color and have recently developed many new shades, with the exception of blue. Especially conspicuous in this connection is the dahlia, which is now found in every color except blue, although many propagators are making earnest efforts to produce a blue dahlia, which would bring great profit to its originator. A blue carnation would be equally valuable, but it has not yet been produced, although the colors of carnations have lately been enriched by many new shades. The new varieties of canna also show great diversity of color, including almost pure white and a beautiful light pink, but a blue canna has not yet appeared. In the begonia not only blue is lacking but also all shades from red to violet. Finally, we may mention the variety of poppy called the Shirley, which is greatly admired for its play of color. Here, however, the col-

Save Your Trees—These Davey Books Will Tell You How!

"OUR WOUNDED FRIENDS, THE TREES"
Graphically describes tree facts, many of them heretofore untold, and gives in detail the Davey methods of tree preservation. This book is unique, just as the Davey system is essentially original. It explains the superior efficiency of Davey methods and tells why only experts should be employed for tree surgery. The book has cost too much to permit promiscuous distribution; but we shall be glad to forward a copy, on request, to any person who has fine trees that are decaying and who is interested in saving them. Ask for Book O.

"THE SALVATION OF OUR TREES"
A little booklet which gives facts about lecture of the same title delivered by John Davey, The Father of Tree Surgery. This lecture is an exposition of the unique science of tree preservation and is attention-compelling to the utmost degree. Fall and winter engagement for Mr. Davey will be made at special rates to Park Commissions, Civic Improvement Societies, Boards of Trade, Schools and Colleges, Women's Clubs and Chautauquas. If interested, write today for open dates, and free copy of Booklet OO.

"THE TREE DOCTOR"
John Davey's latest and most comprehensive work on the care of trees. From the layman's standpoint, it is simple yet effective. An invaluable handbook for every owner really interested in the preservation and care of his trees. Price $2, postpaid.

The Davey Tree Expert Co.
(Operating Davey's School of Practical Forestry)
KENT, OHIO

A PRIVATE
WATER WORKS
FOR YOUR HOME

¶ No matter where you live, or how situated, you may have every convenience of a city water supply, by the use of a

Leader

Pneumatic Water Supply System

¶ Water under pressure for kitchen, laundry, bathroom, sprinkling lawn and garden, watering stock and for fire protection.
¶ An air tight steel tank in the basement stores the water as it is pumped by hand or power and forces it through the pipes and faucets by air compressed in the upper portion of the tank.
¶ No elevated or attic tanks to freeze and become stagnant. Water kept clean and pure.
¶ Send 2 cent stamp for booklet, "How I Solved the Water Supply Problem," which tells "WHY," or 6 cents for "Handbook of Hydro-Pneumatics," which tells "HOW." Catalog on request. Sold by dealers everywhere.

Leader Iron Works
1801 Jasper St., DECATUR, ILL.
Room 518, 15 William St., NEW YORK CITY

REFUSE RECEIVERS and GARBAGE RECEIVERS

Don't Be Knocked Over
By Stenches from Backyard Débris

Why not look up the Stephenson Method? Seven years on the market, and if satisfied protect the health of your family by installing

THE STEPHENSON Underground Garbage Receiver
prevents the swill from **freezing**

THE STEPHENSON TRADE MARK

- Underfloor Refuse Receiver for ashes
- Underground Earth Closets for Camps
- Portable Metal Houses for Above
- Spiral Ribbed Ash Barrel, outwears two
- High-class Bathroom Accessories

SOLD DIRECT. Send for Circular on each
C. H. STEPHENSON, Mfg., 21 Farrar Street
Lynn, Massachusetts

WE MAKE THE PERMANENT KIND OF
RUSTIC WORK
that is thoroughly distinctive and which gives that artistic finish to the country place.

Rustic Tea Houses, Boat and Bath Houses, Arbors, Pergolas, Back Stops for Tennis Courts; Rustic Bridges for Ravines, Entrance Gates, Chairs, Tables, Flower Stands, etc., in fact, Rustic Work of every description.

Catalog and Sketches Sent upon Application
RUSTIC CONSTRUCTION WORKS, 33 Fulton Street, New York City
This Tea House on exhibition in our warerooms ready for immediate shipment

LOW-COST SUBURBAN HOMES
A Practical Guide for Prospective Home-Builders

This book contains 90 illustrations of plans and photographs of houses which have been successfully built at a cost ranging from $1,000 to $10,000, with descriptive articles and an estimate of the cost of most houses described. Only the newest and best have been selected. General views of exteriors, diagrams of interiors, interior decorations and furnishings, and full construction plans make up the illustrations.

Only Most Eminent Architects Are Contributors

If You're Planning to Build—If You Need Ideas on How to Improve Your Home
SEND FOR THIS BOOK. The Cost Is Nominal.

McBRIDE, WINSTON & CO., Dep't L, 6 WEST 29TH ST., NEW YORK

Art Paper Cover, Price, 25 cents postpaid
Art Vellum Cloth Cover, Price, 50 cents postpaid

Cottage Designs

By far the most complete collection of plans ever brought out. Illustrated with full-page plates. One dollar each. Sold separately.

MUNN & CO., INC., 361 BROADWAY, NEW YORK

No. 1. COTTAGE DESIGNS
Twenty-five designs, ranging in cost from $600 to $1,500.
No. 2. LOW-COST HOUSES
Upward of twenty-five designs, costing from $1,000 to $3,000.
No. 3. MODERN DWELLINGS
Twenty designs, at costs ranging from $2,800 to $7,000.
No. 4. SUBURBAN HOMES
Twenty selected designs, costing from about $3,000 upward.

The Beauty of Quarter-sawed Oak

is brought out to perfection by our process of making veneers and by the careful attention given to the finish of each and every door.

Cross section showing construction of 1⅜ inch door.

The name "*Morgan*" is branded on each door.

are perfect doors. Built of several layers with grain running crosswise, pressed together with waterproof glue, making shrinking, warping or swelling impossible. Veneered in all varieties of hardwood—birch, plain or quarter-sawed red or white oak, brown ash, mahogany, etc.

Morgan Doors are light, remarkably strong and absolutely perfect in every detail of construction. Each **Morgan Door** is stamped "*Morgan*" which guarantees quality, style, durability and satisfaction.

In our new book, "The Door Beautiful," **Morgan Doors** are shown in their natural color and in all styles of architecture—Colonial, Empire, Mission, etc., and it is explained why they are the best and cheapest doors for permanent satisfaction in any building. ***A copy will be sent on request.***

Architects: Descriptive details of Morgan Doors may be found in Sweet's index, pages 678 and 679.

Morgan Company, Dept. A, Oshkosh, Wisconsin.

Morgan Sash and Door Company, Chicago, Ill.
Morgan Company, Oshkosh, Wisconsin. Morgan Company, Baltimore, Maryland.

CEMENT

Its Chemistry, Manufacture & Use

Scientific American Supplement 1372 contains an article by A. D. Elbers on tests and constitution of Portland cement.

Scientific American Supplement 1396 discusses the testing of cement.

Scientific American Supplement 1325 contains an article by Prof. William K. Hatt giving an historical sketch of slag cement.

Scientific American Supplements 955 and 1042 give good accounts of cement testing and composition, by the well-known authority, Spencer B. Newberry.

Scientific American Supplements 1510 and 1511 present a discussion by Clifford Richardson on the constitution of Portland cement from a physico-chemical standpoint.

Scientific American Supplement 1491 gives some fallacies of tests ordinarily applied to Portland cement.

Scientific American Supplements 1465 and 1466 publish an exhaustive illustrated account of the Edison Portland cement works, describing the machinery used.

Scientific American Supplement 1519 contains an essay by R. C. Carpenter on experiments with materials which retard the activity of Portland cement.

Scientific American Supplement 1561 presents an excellent review by Brysson Cunningham of mortars and cements.

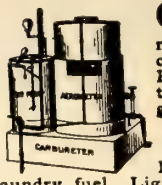
Scientific American Supplement 1533 contains a resumé of the cement industry and gives some valuable formulae.

Scientific American Supplement 1575 discusses the manufacture of hydraulic cement. L. L. Stone is the author.

Scientific American Supplements 1587 and 1588 contain an able paper by Edwin C. Eckel on cement material and industry of the U. S.

Any one of these Supplements will be sent for 10 cents. The entire set costs $1.60, and constitutes an invaluable text book on the subject. Order from your Newsdealer or from

MUNN & COMPANY, Inc., 361 Broadway, New York



Country Homes

may enjoy city comforts and conveniences *at less cost* than Kerosene, Acetylene or Electricity, with none of their dangers, by using the ***Automatic***

Economy Gas Machine

Produces light, kitchen and laundry fuel. Lighted the same as electric, but without batteries. Write for booklet, "*The Economy Way.*"

ECONOMY GAS MACHINE CO., Sole Mfrs.,
437 Main Street Rochester, N. Y.

FINE HARDWOOD FLOORS

Most economical, healthful and satisfactory—for old or new houses, different patterns to match furnishings. Outwear carpets. Stocks carried in the leading cities.

PLAIN OR ORNAMENTAL. THICK OR THIN.

Write for PATTERN CATALOGUE

THE INTERIOR HARDWOOD CO. MFR'S INDIANAPOLIS

Shetland Ponies

An unceasing source of pleasure and robust health to children. Makes ideal Christmas gift. Safe. Inexpensive to keep. Highest type. Many champions. Stallions and mares for breeding. Complete outfits. Our beautifully illustrated free catalogue tells all about them.

BELLE MEADE FARM
Dept. W. Bedford, Mass.

STANDING SEAM ROOF IRONS

CLINCH right through the standing seam of metal roofs. No rails are needed unless desired. We make a similar one for slate roofs.

Send for Circular

Berger Bros. Co.

PATENTED PHILADELPHIA

BRISTOL'S RECORDING THERMOMETERS

make continuous records of atmospheric temperatures, and are designed for both indoor and outdoor temperatures. Send for new catalogues.

THE BRISTOL COMPANY, WATERBURY, CONN.
NEW YORK *Branches* CHICAGO

Save $27.50 on this Quartered Oak Buffet

Retail Store price, - $50.00
Our "Come-packt" price, 22.50

You put the finished sections together yourself. A few minutes' easy work without tools saves you over half on

SECTIONAL "COME-PACKT" FURNITURE

Over 100 other handsome pieces in our new catalog—all GUARANTEED. Write today

COME-PACKT FURNITURE CO., 1139 Edwin St., Ann Arbor, Mich.

GINSENG The most valuable crop in the world. Easily grown throughout the U. S. and Canada. Room in your garden to grow thousands of dollars' worth. Roots and Seeds for sale. Send 4c. for postage and get our booklet A-V, telling all about it. McDOWELL GINSENG GARDEN, Joplin, Mo.

For $5

American Homes & Gardens and *Scientific American* sent to one address for one year.

REGULARLY $6

ors range only from white to rose and vermilion. Blue and violet colors are completely wanting and so is yellow, which is very common in the begonia.

ther species which have recently produced many new tones, with the exception of blue, include: Belargonium, Schahosa, Calceolaria, Antirrhinum, Mirabilis Jalapa (Four o'Clock or Marvel of Peru), hollyhocks, immortelles, and some species of Phlox and Godetia. The Gilliflowers, Wallflowers, and Balsams belong in the same category, for the varieties of these three flowers which are described as blue in seedmen's catalogues are not pure blue, but violet.

It should be observed, furthermore, that among species which have produced many new colors, there are some in which the color yellow is wanting. This is the case with some species of larkspur (*Delpinium ajacis* and *D. consolidated*), with *Dianthus Heddewigii* and with the verbenas and Clarkias.

Finally, there are species which, notwithstanding many years of cultivation, have shown little variation in the color of their flowers or have produced only new shades but not new colors. Among these are the fuchsias, which show only various shades of red. A blue or a yellow fuchsias would be a curiosity. Another example is furnished by *Cyclamen persicum,* in which many years of cultivation have only changed the original color scheme of a dark red throat and a white or pink tip so far as to deepen the red throat to crimson and almost violet and, on the other hand, to efface it altogether, producing a pure white flower. Quite recently, however, an approximation to a yellow has been obtained by the production of a salmon-pink cyclamen. Similar cases are furnished by the Alpine forget-me-not, in which merely the shade of the original blue color has been slightly altered by cultivation, and by the marigold (*Tagetes*), the colors of which vary only from yellow and orange to brown.

From the foregoing remarks it is evident that, although very many new colors have recently been produced by cultivation in the flowers of numerous species of plants, the production of these changes is entirely dependent upon the original predisposition to variation possessed by the plant. Without these tendencies to variation, no new color can be produced, either by the gardener or by natural selection, for if there is no variation, selection is impossible.

BURGLAR-PROOF GLASS

Consul William Bardel, of Rheims, reports that a new French plate glass has been brought out which is practically burglar-proof. While an ordinary plate glass, such as is usually put into jewelers' show windows, can be smashed by a single stroke of a metal-faced mallet, it is not possible to break this new plate glass in this manner. In an experiment made, a large piece of castiron was thrown violently against the window, but the only effect on the glass was a small hole measuring one or two inches. Several shots of a revolver loaded with jacketed bullets were then fired at the show window, but the window suffered no damage except that the bullets entered to a depth of a fraction of an inch. The plate glass which will stand such usage is ordinarily made of a thickness of ⅞ to 1 inch. If desired, even a heavier glass can be made without diminishing the transparency.

The first steel steamship ever built in the maritime provinces of Canada is under construction at Yarmouth, Nova Scotia. A great development is expected in this industry, which, in the days of wooden vessels, was such an important factor in the prosperity of the provinces bordering on the Atlantic coast.

We speak of the *good* old days—the charming graces and courtly ways. But do we forget that they did not know

Uneeda Biscuit

The Soda Cracker that is the delight of this day and generation.

NATIONAL BISCUIT COMPANY

Hess Sanitary Bath Room Locker (Medicine Cabinet)

Something New For Your Home

Made of Solid, Smooth Steel Throughout, and Finished Inside and Out in Finest Everlasting Baked White Enamel—Snow White—with Adjustable Enameled Steel Shelves, Nickel Plated Hinges and Handle.

Better Than Wood and Costs No More

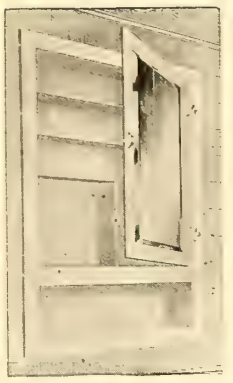
Dust, Germ and Vermin Proof.

No home is complete without a Hess Sanitary Bathroom Locker. It is suitable for the finest bath room. It is dust, germ and vermin proof and easily cleaned with warm water.

Style "A" Locker is made to recess into the wall and projects 1¼ inches from the face of wall. It has a beveled plate mirror 16x20 inches and measures 19½x23½ inches inside. Below the mirror is an open shelf 19½x5½ inches. Style "C" is the same size and finish; made ***not to recess*** into the wall, but to be suspended on the wall.

Price of Style "A" $8.00
Price of Style "C" 9.00
Without Mirror deduct $1.50
Without Open Shelf deduct $1.00

We will prepay freight charges anywhere east of Missouri and north of Ohio rivers on orders for two or more.

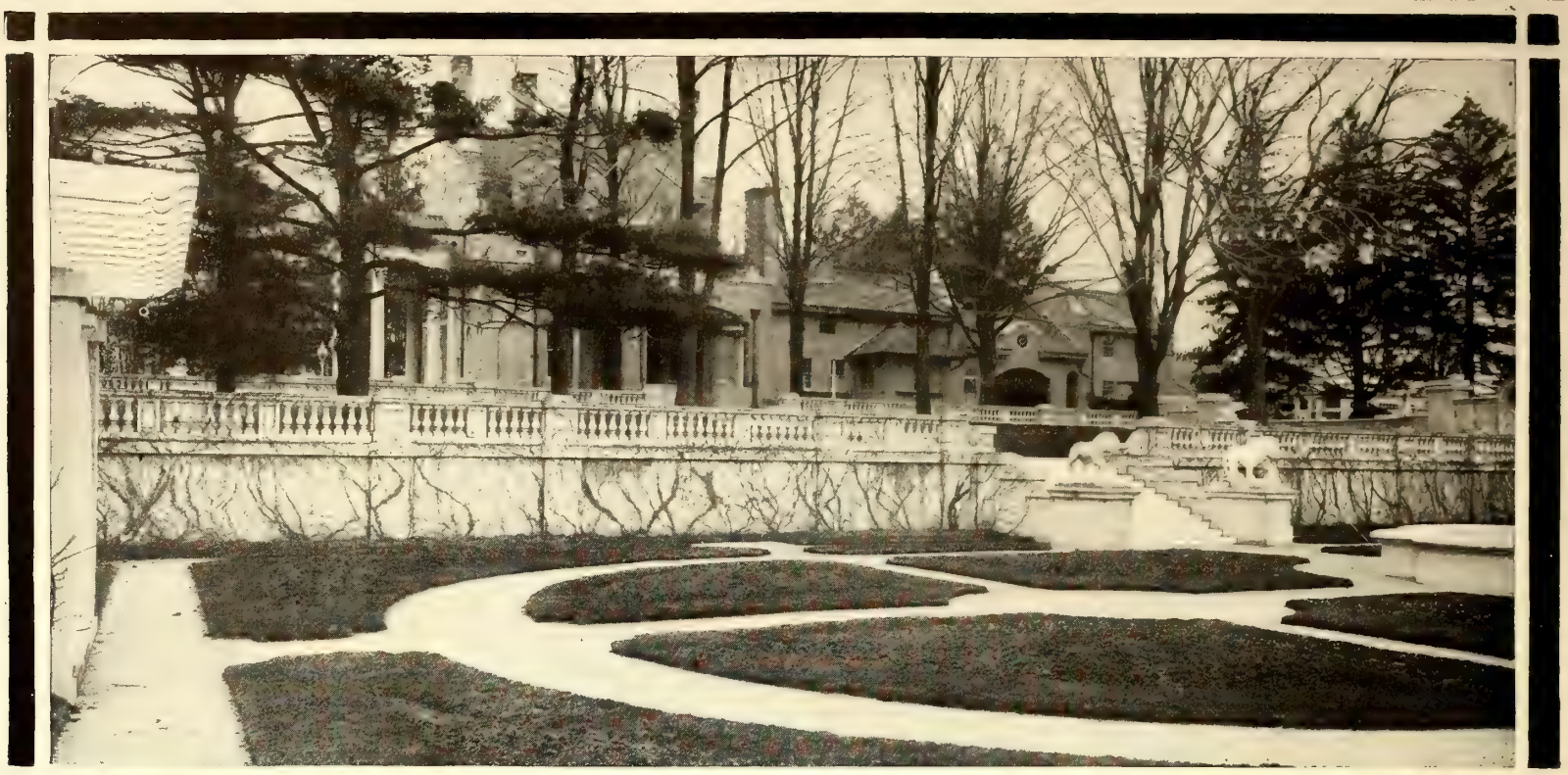


The same cabinets with a different arrangement inside, are used in office buildings, clubs and institutions for ***Toilet Lockers.***

Send for Illustrated Circular Showing Several Sizes

We are makers of the Hess Steel Furnace. Important booklet, "Modern Furnace Heating" Sent Free.

Hess Warming & Ventilating Co. 926 L Tacoma Bld CHICAGO



ATLAS PORTLAND CEMENT

To make concrete construction successful requires the proper proportions of the ingredients, intelligent application, good design, and careful workmen. All these are important, but the most important of all is to get the right kind of cement.

"Portland Cement" is a general term like "flour" or "woolen." Atlas Portland Cement is the best kind of Portland Cement that can be made.

By having your architect specify "Atlas," you will get a building material that has all of the good qualities. This will give you a house that is fireproof, sanitary, cool in summer, warm in winter; which reduces coal bills, fire insurance, cost of painting, repairs and upkeep.

This same material—that is, Atlas Portland Cement—will enable you to beautify your place—building walks, fences, terraces and all the other details of building which go to make a country place attractive. Send for any or all of these useful books:

"Concrete Construction About the Home and on the Farm" (sent free), is a book valuable to every present or prospective builder of a house or country place. Other books that will interest you are:

Concrete Houses and Cottages, Vol. I. Large Houses	$1.00
Vol. II. Small Houses	1.00
Reinforced Concrete in Factory Construction (delivery charge)	.10
Concrete in Highway Construction	1.00
Concrete in Railroad Construction	1.00
Concrete Cottages	Free
Concrete Country Residences (out of print)	2.00

"Atlas" is the brand of Portland Cement purchased by the Government for use in building the Panama Canal.

IF YOUR DEALER CANNOT SUPPLY YOU WITH ATLAS, WRITE TO

THE ATLAS PORTLAND CEMENT CO.

DEPT. 10, 30 BROAD STREET, NEW YORK

Largest output of any cement company in the world
Over 50,000 barrels per day

NONE JUST AS GOOD

JUST PUBLISHED
Three New Interesting Books

Concrete Pottery and Garden Furniture

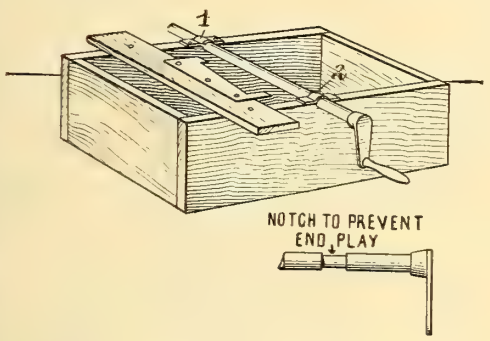
BY RALPH C. DAVISON

12mo, 5¼ x 7½ inches, 196 pages, 140 illustrations. Price, **$1.50** Postpaid

A most attractive book. The only work issued on the subject

THIS work should appeal strongly to all those interested in ornamental concrete, as the author has taken up and explained in detail in a most practical manner the various methods of casting concrete in ornamental shapes. The titles of the thirteen chapters which this book contains will give a general idea of the broad character of the work. They are entitled:

I., Making Wire Forms and Frames; II., Covering the Wire Frames and Modeling the Cement Mortar into Form; III., Plaster Molds for Simple Forms; IV., Plaster Molds for Objects Having Curved Outlines; V., Combination of Casting and Modeling—An Egyptian Vase; VI., Glue Molds; VII., Colored Cements and Methods Used for Producing Designs with Same; VIII., Selection of Aggregates; IX., Wooden Molds—Ornamental Flower Pots Modeled by Hand and Inlaid with Colored Tile; X., Concrete Pedestals; XI., Concrete Benches; XII., Concrete Fences; XIII., Miscellaneous, Including Tools, Waterproofing and Reinforcing.



The first two chapters explain a most unique and original method of working pottery which has been developed by the author. The chapter on color work alone is worth many times the cost of the book, inasmuch as there is little known on this subject, and there is a large and growing demand for this class of work. The author has taken for granted that the reader knows nothing whatever about the material and has explained each progressive step in the various operations throughout in detail. These directions have been supplemented with half-tones and line illustrations which are so clear that no one can misunderstand them. The amateur craftsman who has been working in clay will especially appreciate the adaptability of concrete for pottery work, inasmuch as it is a cold process throughout, thus doing away with the necessity of kiln firing, which is necessary with the former material. The book is well gotten up, and is printed on heavy glazed paper and abounds in handsome illustrations throughout, which clearly show the unlimited possibilities of ornamentation in concrete.

Handy Man's Workshop and Laboratory

Compiled and Edited by **A. RUSSELL BOND**

12mo, 6 x 8¼ inches, 467 pages, 370 illustrations
Price, **$2.00** Postpaid

A Collection of Ideas and Suggestions for the Practical Man

EVERY practical mechanic, whether amateur or professional, has been confronted many times with unexpected situations calling for the exercise of considerable ingenuity. The resourceful man who has met an issue of this sort successfully seldom, if ever, is adverse to making public his methods of procedure. After all, he has little to gain by keeping the matter to himself and, appreciating the advice of other practical men in the same line of work, he is only too glad to contribute his own suggestions to the general fund of information.

About a year ago it was decided to open a department in the *Scientific American* devoted to the interests of the handy man. There was an almost immediate response. Hundreds of valuable suggestions poured in from every part of this country and from abroad as well. Not only amateur mechanics, but professional men, as well, were eager to recount their experiences in emergencies and offer useful bits of information, ingenious ideas, wrinkles or "kinks" as they are called. Aside from these, many valuable contributions came from men in other walks of life—resourceful men, who showed their aptness at doing things about the house, in the garden, on the farm. The electrician and the man in the physics and chemical laboratory furnished another tributary to the flood of ideas. Automobiles, motor cycles, motor boats and the like frequently call for a display of ingenuity among a class of men who otherwise would never touch a tool. These also contributed a large share of suggestions that poured in upon us. It was apparent from the outset that the Handy Man's Workshop Department in the *Scientific American* would be utterly inadequate for so large a volume of material; but rather than reject any really useful ideas for lack of space, we have collected the worthier suggestions, which we present in the present volume. They have all been classified and arranged in nine chapters, under the following headings:

I., Fitting up a Workshop; II., Shop Kinks; III., The Soldering of Metals and the Preparation of Solders and Soldering Agents; IV., The Handy Man in the Factory; V., The Handy Man's Experimental Laboratory; VI., The Handy Man's Electrical Laboratory; VII., The Handy Man about the House; VIII., The Handy Sportsman; IX., Model Toy Flying Machines.

The Scientific American Boy at School

By A. RUSSELL BOND

12mo, 6 x 8¼ inches, 338 pages, 314 illustrations.
Price, **$2.00** Postpaid

An Ideal Book for Boys and Particularly so for the Holidays

THIS book is a sequel to "The Scientific American Boy," many thousand copies of which have been sold, and has proven very popular with the boys. The main object of the book is to instruct how to build various devices and apparatus, particularly for outdoor use. The construction of the apparatus which is fully within the scope of the average boy, is fully described and the instructions are interwoven in a story, a feature which has assisted in making "The Scientific American Boy" so popular and interesting to the boy.

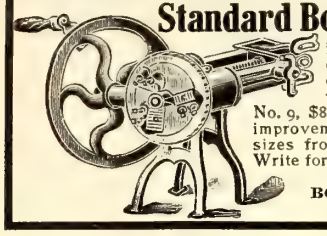
It takes up the story of "Bill" and several of his companions at boarding school. They form a mysterious Egyptian society, whose object is to emulate the resourcefulness of the ancients. Their Chief Astrologer and Priest of the Sacred Scarabeus is gifted with unusual powers, but his magic is explained so that others can copy it. Under the directions of the Chief Engineer, dams, bridges and canal-locks are constructed. The Chief Admiral and Naval Constructor builds many types of boats, some of which are entirely new. The Chief Craftsman and the Chief Artist also have their parts in the work done by the Society, over which Pharaoh and his Grand Vizier have charge. Following is a list of the chapters:

Chapter I., Initiation; Chapter II., Building a Dam; Chapter III., The Skiff; Chapter IV., The Lake House; Chapter V., A Midnight Surprise; Chapter VI., The Modern Order of Ancient Engineers; Chapter VII., A "Pedal Paddle-Boat"; Chapter VIII., Surveying; Chapter IX., Sounding the Lake; Chapter X., Signaling Systems; Chapter XI., The Howe Truss Bridge; Chapter XII., The Seismograph; Chapter XIII., The Canal Lock; Chapter XIV., Hunting with a Camera; Chapter XV., The Gliding Machine; Chapter XVI., Camping Ideas; Chapter XVII., The Haunted House; Chapter XVIII., Sun-Dials and Clepsydras; Chapter XIX., The Fish-tail Boat; Chapter XX., Kite Photography; Chapter XXI., Water-Kites and Current Sailing; Chapter XXII., The Wooden Canoe; Chapter XXIII., The Bicycle Sled; Chapter XXIV., Magic; Chapter XXV., The Sailboat; Chapter XXVI., Water Sports, and Chapter XXVII., Geyser Fountain.

MUNN & COMPANY, Inc., Publishers, 361 Broadway, New York

The Best of All Bone Cutters

Best, because it's the *only cutter made* that cuts bone across the grain. And the most successful poultrymen know that bone cut in this way is easily assimilated by the hens and produces the best results. The



Standard Bone Cutter

is easy to run and easy to buy. Sent on 10 days free trial. Cut shows No. 9, $8.80. It has many improvements. 11 other sizes from $6.75 to $195. Write for catalogue.

STANDARD BONE CUTTER CO.
Milford, Mass.

Van Dorn Iron Works Co.

PRISON, HOUSE & STABLE WORK

JOIST HANGERS
LAWN FURNITURE
FENCING, ETC.

CLEVELAND, OHIO

PREVENTS DRAFTS, DUST AND WINDOW RATTLING.

IVES' PATENT Window Stop Adjuster.

PATENTED.

The only Stop Adjuster made from one piece of metal with solid ribs and heavy bed that will not cup, turn or bend in tightening the screw. Manufactured only by **The H. B. IVES CO., New Haven, Conn., U. S. A.** (Fifty-page Catalogue Mailed Free.)

Too Nice to be Without "FURNITURE"

The only magazine of its kind in the world. Tells how to distinguish *furniture of character* from the common and unworthy kind, illustrates the best modern interpretations of the old masters. "FURNITURE" is not a technical magazine. It is written for the users of good furnishings, profusely illustrated with the latest designs, contains valuable and interesting information on a subject each lover of the correct and beautiful in the home will revel in.

60 pages 9 in x 13 in

Published quarterly at $1.00 the year. Send 35c. for sample copy which will be credited on yearly subscriptions if you wish.

GRAND RAPIDS FURNITURE RECORD CO.
Publishers, Dept. D, Grand Rapids, Mich.

EUGENE PITOU, JR.

CIVIL ENGINEER AND LANDSCAPE ARCHITECT

Designs and Estimates for Improving and Constructing the Grounds of City and Suburban Properties.
Ornamental Fixtures Furnished

229 BROADWAY NEW YORK
Telephone, 6084 Barclay

"BEAUTIFYING HOME SURROUNDINGS" tells the best, most practical way to plant for immediate effect. Shows how to improve YOUR property FREE. Write to-day.
LOVETT, Landscape Service, Box 128, Little Silver, N. J.

The Scientific American Boy

By A. RUSSELL BOND. 320 pages, 340 illus. $2.00 postpaid

A STORY OF OUTDOOR BOY LIFE

Suggests a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. Complete practical instructions are given for building the various articles, such as scows, canoes, windmills, water wheels, etc.

MUNN & CO., Inc., Publishers 361 Broadway, New York

BURLINGTON Venetian and Sliding BLINDS

Venetian Blind for inside window and outdoor veranda. Any wood; any finish to match trim.

SCREENS AND SCREEN DOORS

¶ Equal 500 miles northward. Perfect privacy with doors and windows open. Darkness and breezes in sleeping rooms.

Sliding Blinds for inside use. Require no pockets. Any wood; any finish.

WRITE FOR OUR CATALOGUE, PRICE-LIST AND PROPOSITION TO YOU

BURLINGTON VENETIAN BLIND CO., 339 Lake St., Burlington, Vermont

Among the Best Class of Women

you will find the Drama, the Stage, Players and all subjects pertaining to the Theatre of intense interest and daily discussion.

The Theatre Magazine

is the only publication devoted to the playgoers' interests in America. It is the most beautiful magazine published, and its elaborate photographic illustrations of Players, Scenes, etc., make it worth preserving in the library of every woman of culture and lover of the beautiful.

Each month's issue contains articles of current and advance interest about Stage Favorites, New Plays, Music and the Opera here and in Europe. Every article is illustrated from exclusive photographs, and written by the authoritative writers, critics, playwrights, managers and players themselves. The romance of "Behind the Scenes" is brought to your library table in all its fascinating dress. Descriptive articles on the new plays, advance information on the appearance of old-time favorites in new roles.

Fashions as seen on the Stage and designed by leading actresses for their own roles; showing how the Stage is the modern creator of Smart Dress.

Gossip of intimate Stage Life and anecdotes of famous players. Interviews with Stage Celebrities. Music and the Opera.

Photographic reviews of Stars and scenes from their plays. Interesting descriptions of Stage Novelties as originating in London, Paris and Vienna.

Photographs of Stage Favorites Free

The **Theatre Magazine** has no rival, suffers no competition. Once you begin to read it you will become a regular subscriber every year. Knowing this we make a special offer to get the **Theatre Magazine** into your hands for the first time.

Cut off this coupon, fill in and mail to us with one dollar. We will send you the **Theatre Magazine** for three months beginning with the August issue and your choice of two full-size photogravure photographs of your favorite actors or actresses from the list on the coupon. Cut the coupon off now and mail today. Address Circulation Manager

The Theatre Magazine, 28 W. 33d Street, New York

American Homes and Gardens Nov., '09
THEATRE MAGAZINE New York

Gentlemen:
Enclosed find one dollar, for which please send your magazine for three months and photogravure photographs of Lillian Russell, Maude Adams, E. H. Sothern, Kyrle Bellew, Fritzi Scheff, Frances Starr.

Name.....
Address.....
City.....

American Homes and Gardens for December

The First Prize in the Garden Competition

The garden adjudged the first prize in the recent garden competition conducted by this magazine forms the subject of the opening article in the December number. This is the garden of Charles J. Pilling, at Lansdowne, Pa., a charming and delightful place abounding in picturesque developments very ably utilized and beautifully developed. The text consists of the brief description prepared by Mr. Pilling himself to accompany his photographs, together with an itemized list of his plantings. The illustrations, which include several full-page plates, are very numerous and of the deepest interest. The presentation of this subject is bound to attract wide attention, as it affords the magazine some of the most beautiful illustrations it has ever published.

A New Artists' Home

The beautiful, yet modest, home of Mr. and Mrs. Robert V. V. Sewell at Oyster Bay constitutes a notable contribution to Barr Ferree's series of papers on the homes of American artists. While modest in size, and without the grandiose character that is sometimes attributed to notable homes, this house easily stands among the most notable private dwellings in America. Mr. Sewell, a painter of national renown, has lavished of his genius and his work in a remarkable enrichment of hand woodcarving, all executed by himself, which gives an intensely personal character to the house and is its distinguishing characteristic. This house has not been published heretofore, and AMERICAN HOMES AND GARDENS is fortunate in being able to present it to the interested public.

Hammering and Piercing Metal

Mrs. Mabel T. Priestman contributes a valuable and practical paper on the craft of hammering and piercing metal. This is an interesting and fascinating form of craftwork that any one, with Mrs. Priestman as a guide, can readily follow. The illustrations show exactly how this work is done, and offers some interesting practical designs.

Bungalow Furnishings

Kate Greenleaf Locke, whose article on four California bungalows is a distinguishing feature of the present number, opens up a new theme in bungalow literature with an eminently readable and suggestive paper on interior bungalow details and furnishings. Miss Locke offers a number of helpful and valuable suggestions on the treatment and equipment of bungalow interiors, and illustrates her paper with numerous and beautiful photographs taken expressly for this article.

A Concrete Fence

Ralph C. Davison's series of papers on concrete garden ornaments and how to make them is brought to a close in an interesting paper on the methods of building a concrete fence. The text is very precise and definite, and is especially intended to enable any one to build his own fence from the directions given. The illustrations are especially numerous, and include both diagrams and halftones. It is a fine article of great practical value.

Some New Western Homes

Francis Durando Nichols, who has been gathering material for the magazine in the West, offers the first fruit of his work in a valuable paper on some new Western homes. The illustrations are chiefly of Chicago houses and open up an entire new school of architecture to our readers. Mr. Nichols will have more to say on this subject in future numbers, but the first article should not be missed.

Other Contents

The lesser papers and special departments of the magazine will contain much material of value and of special interest. New departments are being arranged each month, and each number, in the interest and variety of its contents, yields many times its value to the subscriber. The December number closes the fifth volume. The sixth will begin with the number for January, 1910.

Cottage Designs

THESE books offer to architects, builders, homeseekers and investors by far the most complete collection of plans ever brought out, while the price is so low as to place them within the reach of all who have an interest in the building of homes. The designs are compiled with a view to representing all grades of cost, from the simplest types of cottages, as illustrated in the first series, to the comparatively elaborate structures reaching to $10,000 or more, in cost, treated in the fourth series, so that examples are given covering nearly every requirement, with respect to cost, in inexpensive homes.

No. 1. Cottage Designs with Constructive Details

A series of twenty-five designs of cottages, most of which have been erected, ranging in cost from $600 to $1,500; together with the details of interior and exterior finish, all drawn to convenient scale, and accompanied by brief specifications. Illustrated with 53 full-page plates of floor plans, elevations and details.

No. 2. Low Cost Houses with Constructive Details

Embracing upward of twenty-five selected designs of cottages originally costing from $1,000 to $3,000, accompanied with elevations, floor plans and details of construction, all drawn to scale, together with brief descriptions and, in many instances, full specifications and detailed estimates of cost. Illustrated by 61 full-page plates of floor plans, elevations and details.

No. 3. Modern Dwellings with Constructive Details

A selection of twenty designs of artistic suburban dwellings erected in various parts of the country, at costs ranging from $2,800 to $7,000; embracing floor plans, elevations and constructive details, showing interior and exterior finish, and drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions, from photographs of the completed structures, and 61 full-page plates of floor plans, elevations and details.

No. 4. Suburban Homes with Constructive Details

Comprising twenty selected designs of attractive suburban homes, ranging in cost from about $3,000 upward; embracing floor plans, elevations and constructive details, showing interior and exterior finish, all drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions from photographs of the completed structures, and 75 full-page plates of plans, elevations and details.

ONE DOLLAR EACH, POSTPAID
(Sold Separately)

MUNN & CO. INC. *Publishers of* SCIENTIFIC AMERICAN
Three-Sixty-One Broadway, New York

BOUND VOLUMES OF

American Homes and Gardens

1,100 ILLUSTRATIONS **1908** **494 PAGES PRICE, $5.00**

American Homes and Gardens covers a wide scope; it deals with house building from the design and construction of modest cottages on tiny lots to the building of mansions on large estates. All degrees of gardening, from laying out a landscape to the planting of a window-box, are dealt with. Practical questions of water supply, of sanitation, or of the arrangement of the kitchen receive equal treatment with draping of windows or the arrangement of old china.

American Homes and Gardens is beautifully printed. The year's volume contains more than a thousand engravings, as full of detail and finish as actual photographs. They depict some of the old and historic mansions of America, and the most beautiful of gardens or of natural scenery. The following list of a few of the principal practical articles which appear in *American Homes and Gardens* during 1908, will show the wide choice of subject:

Notable American Homes (12 descriptive articles)—**The Rose as a Summer Bedder**—**Private Automobile Garages**—**Leaded Glass Windows**—**Etching on Copper and Brass**—**Problems in House Furnishing** (12 papers)—**Garden Work About the Home** (12 papers)—**Indoor Bulb Culture**—**Farming Experiment of a Woman**—**Rugs from the Scrap Bag**—**Water Parks**—**Old-Time Lights**—**Latches and Knockers**—**The Sun Room**—**Japanese Gardens in America**—**Sun-Dials**—**Heating and Lighting with Alcohol**—**Spring Houses Old and New**—**Planning a Country Home**—**The House Roof and Its Garden**—**The Plant and the Season**—**Garden Streams and Bridges**—**Stencil Work in Home Decoration**—**Bungalows** (12 articles)—**Scientific Poultry Breeding.**

¶ A limited number of volumes for 1907 are available. 480 pages. 1,050 illustrations. Price, $5.00. Volume for 1906, $5.00. Volume for 1905, $3.50.

MUNN & COMPANY, Inc., 361 Broadway, New York

PATENTS

THE WEALTH OF NATIONS

A PATENT gives you an exclusive right to your invention for a term of seventeen years. You can sell, lease, mortgage it, assign portions of it, and grant licenses to manufacture under it. Our Patent system is responsible for much of our industrial progress and our success in competing in the markets of the world. The value of a successful Patent is in no degree commensurate with the almost nominal cost of obtaining it. In order to obtain a Patent it is necessary to employ a Patent Attorney to prepare the specifications and draw the claims. This is a special branch of the legal profession which can only be conducted successfully by experts. For nearly sixty years we have acted as solicitors for thousands of clients in all parts of the world. Our vast experience enables us to prepare and prosecute Patent cases and Trade Marks at a minimum of expense. Our work is of one quality and the rates are the same to rich and poor. Our unbiased opinion freely given. We are happy to consult with you in person or by letter as to the probable patentability of your invention.

Hand Book on Patents, Trade Marks, etc., Sent Free on Application.

Branch Office:
625 F Street
Washington, D. C.

MUNN & COMPANY
Solicitors of Patents
Main Office: 361 BROADWAY, NEW YORK

Inexpensive Country Homes

A Practical Book for *A*rchitects, Builders, and Those Intending to Build

A HANDSOME CLOTH-BOUND PORTFOLIO, consisting of 88 pages, about 11x14, printed on heavy plate paper, and containing 43 designs, with floor plans of practical, tasteful and comfortable country homes, ranging in cost from $1,000 to $5,000 complete. The designs have been carefully selected, as embodying the best efforts of various architects throughout the country. Every one of the houses has already been built, and all of the illustrations are half-tone engravings, made direct from photographs of the completed structures, taken specially by the SCIENTIFIC AMERICAN artists. In many cases two perspective views of the same house are shown. Several illustrations of inexpensive stables are also included among the designs.

¶ The location of the dwellings, the cost, owners' and architects' names and addresses are given, together with a description of the dwelling, thus enabling, if desired, a personal inspection of the dwelling or direct correspondence with the architect or the owner.

ARCHITECTS, BUILDERS, AND THOSE INTENDING TO BUILD

will find many new and valuable suggestions among the up-to-date designs illustrated in this handsome portfolio.

PRICE $2.00 POSTPAID

MUNN & CO., Inc., 361 Broadway, New York

AMERICAN HOMES AND GARDENS

Price, 25 Cents. $3.00 a Year

CONTENTS FOR NOVEMBER, 1909

PAGE

"Villa al Mare": the Picturesque Grouping of the House Terrace 414
Monthly Comment—The Garden Competition and Its Prizes 416
Notable American Homes—"Villa al Mare," the Country Home of George Lee, Esq., at Beverly Farms, Massachusetts . . . . . *By Barr Ferree* 417
The Garden at Hamilton House . . . . . *By Louise Shelton* 422
Concrete Ornaments for the Garden and How to Make Them. III.—A Concrete Pedestal . . . . . *By Ralph C. Davison* 426
The House of J. H. Hammond, Esq., at Wynnewood, Pennsylvania. *By Marshall S. Wheeler* 429
A Group of Modern Houses at Nutley, New Jersey, Costing from $1,000 to $5,000. *By Francis Durando Nichols* 431
Bedroom Window-curtaining . . . . . *By Mabel Tuke Priestman* 436
The Beauty and Economy of Stucco . . . . . *By John A. Gade* 438
A Farming Experiment by Women . . . . . *By S. Leonard Bastin* 443
Four California Bungalows . . . . . *By Kate Greenleaf Locke* 446
The American Shetland Pony . . . . . *By Fritz Morris* 450
"Pine Haven," the Summer Home of Thomas B. Van Buren, Esq., at Kennebunkport, Maine . . . . . *By Robert Thompson* 451

Correspondence:

Problems in Home Furnishing . . . . . *By Alice M. Kellogg* xiii
Garden Work About the Home . . . . . *By Charles Downing Lay* xiii

Houses That Do Not Shake Down.
Our Native Persimmons.
The Alteration of the Colors of Flowers by Cultivation.
Garden Notes.
New Books.

Combined Rate for "American Homes and Gardens" and "Scientific American," $5.00 per year
Rate of Subscription of "American Homes and Gardens" to foreign countries, $4.00 a year
Rate of Subscription of "American Homes and Gardens" to Canada, $3.50 a year

Published Monthly by Munn & Co., Inc., Office of the "Scientific American," 361 Broadway, New York

CHARLES ALLEN MUNN, President
361 Broadway, New York

FREDERICK CONVERSE BEACH, Secretary and Treasurer
361 Broadway, New York

[Copyright, 1909, by Munn & Company. Registered in U. S. Patent Office. Entered as second-class matter, June 15, 1905, at the Post Office at New York, N. Y., under the Act of Congress of March 3, 1879.]

NOTICE TO CONTRIBUTORS—The Editor will be pleased to have contributions submitted, especially when illustrated by good photographs; but he cannot hold himself responsible for manuscripts and photographs. Stamps should in all cases be inclosed for postage if the writers desire the return of their copy.

"Villa al Mare" : the picturesque grouping of the house terrace

AMERICAN HOMES AND GARDENS

Volume VI November, 1909 Number 11

"Villa al Mare": the garden pool below the house

Monthly Comment

The Garden Competition and Its Prizes

NO MORE agreeable task has fallen to the lot of the editor of AMERICAN HOMES GARDENS than to announce the results in the Garden Competition, generously instituted by the publishers of this magazine some months ago. Pleasant as this duty is, it is not more so than was the pleasure of examining the multitude of photographs once the Committee of Judges had finished their task and announced their award. For weeks the office mail has been weighted down with packages and bundles of all sorts of shapes, sizes and weights, addressed, as directed, to the Garden Competition Editor. You may be sure that, if it were a task to care for this valuable mail, it was even more onerous for the judges to examine it, weigh the respective merits and reach a decision—a decision that was fair to the conditions of the competition, fair to the competitors and fair to the gardens entered in this novel contest.

AND now, that the work has been finished, the competition closed, the photographs, plans and papers submitted, examined, and the judgment rendered, the editor may be permitted a personal word of satisfaction in the success that has attended the competition from the beginning, in the wide attention it has attracted, in the beautiful results it has disclosed, and in the care and discretion with which the judges have performed their work. Thanks, many, many thanks, to all concerned in this competition; thanks for the interest shown by entry in it, and thanks especially for the delightful privilege it has afforded of an opportunity of studying many gardens that might otherwise have remained unknown, or at least unvisited.

IT may be well, at this time, to recall the terms of the competition and what it was about. The circular and the advertiseements that have appeared from month to month in our pages of late were quite precise and definite. The competition was founded by the publishers for the express purpose of enabling the magazine to help its army of readers by teaching them, through actual examples, how to beautify their surroundings. Every one who establishes himself in the country in his own home desires a garden of his own. This is really one of the reasons, although, perhaps, not always the principal one, that has induced and occasioned the remarkable movement countryward that has become so marked a feature of rural life. But the desire to own and develop a garden is often baffled, and sometimes stifled, by a lack of knowledge as to how to proceed and what to do. There is no other stimulus, in such a contingency, than knowing what other people have done, if not under identical conditions, perhaps under similar ones; if not just your individual problem, then a problem that approximates yours, and which may, it is to be hoped, include some of the vexations that have vexed you and yet which have emerged triumphant and successful.

THIS is what the competition was about and this is what it was for. The editor believes this was a useful thing to do and a wise one. There are precisely two things that lead to good results in gardening, namely, example and practise. A successful garden is a work of art, but one must know just what one is going to do and what results will be obtained before starting out to win the success that it is hoped to obtain from the beginning. This knowledge can only be acquired by the study of good gardens already existing. Thus it happens that the intelligent observer may gain from a garden that in no way resembles his, ideas, suggestions, inspirations and arrangements that will stimulate and help him in his own work, and which, sometimes in an unconscious way, may help on his own success.

ONE can, therefore, never view too many gardens, nor study them too attentively if one is a true garden-lover. Nature there speaks aloud in her most beautiful forms. Not naturally, perhaps, for somehow all gardens are more or less artificial, since the most delightful of flowers and plants do not always grow in regular order or even in "natural" groups. The first step is to know what has been done; and then, after due study and preparation, to proceed to do it oneself. Not, if you please to note, to reproduce another's garden as your own, but to use such ideas as seem best suited to your own needs. At the most, you can only do the best you can, but the bravest of efforts should be made to end this.

I HAVE delayed, perhaps, more than need be, in presenting the Roll of Honor in the Garden Competition, and will delay this pleasure no longer. Here is the list:

ROLL OF HONOR

First Prize, $100

CHARLES J. PILLING.....LANSDOWNE, PA.

Second Prize, $50

CHARLES D. DAVIES.....ENGLEWOOD, N. J.

Third Prize, $25

ANTHONY P. FINDER.....TROY, N. Y.

Fourth Prize, $15

MRS. ANNA H. CONDICT.....ESSEX FELLS, N. J.

Fifth Prize, $10

EDWARD S. PAYSON.....LEXINGTON, MASS

Honorable Mention

MRS. JAMES R. MELLON.....NEW FLORENCE, PA.

I congratulate these ladies and gentlemen most heartily on the success that has attended their devotion to gardencraft. That they will be gratified at the prizes awarded them by a disinterested committee of judges may also be expected; but over and above the money prizes awarded them, is the real value of their individual contributions to gardening and gardening art.

NOW, that this competition has come to a successful close, it may be of interest to state that a second garden competition, on somewhat similar lines, is being planned by AMERICAN HOMES AND GARDENS for 1910. (The date looks a bit far off, but actually it is no more distant than next year.) It is too early to tell of this in any detail at this writing, or even to announce it formally; but mention of the plan seems suitable here, and it is made in the hope that it may lead to greater stimulus in obtaining results than in the notable competition whose conclusion is now made public.

TO THE garden, then, one and all! It is now too late to get out the spade and the rake and start the garden for next year, but it is not too late to begin on the planning and study that must precede successful garden work next spring. The garden must be put in proper order for the winter, and in the ordinary routine of work the garden-lover will find much to occupy him, even in the closing months of the year. But now is the season of preparation, and when the glad springtime comes along next year, as it is bound to do in any event, let our friends who are interested in the practical side of gardencraft be ready for a new activity and a new interest. Depend upon it, AMERICAN HOMES AND GARDENS will have something of interest to say in that season.—THE EDITOR.

Notable American Homes

By Barr Ferree

"Villa al Mare," the Country Home of George Lee, Esq., at Beverly Farms, Massachusetts

UNLIKE many homes on the "North Shore," Mr. Lee's house is not directly upon the water. It is, however, not far distant from it, and occupying, as it does, a picturesque site on a hillside that rises sharply above the road, it has the advantage of a fine situation, the more remarkable because the garden and most of the grounds are not visible from without, and the great beauty and skill with which these have been laid out offer many surprises to the visitor. The house itself is in full view of all beholders, its main front rising high above the roadway, banked, on the inner side, by the giant rocks and forest trees against which it is built. These natural features entirely surround the house, as seen from without, and give it an unusual setting. As a matter of fact, the property lies at a junction of two roads, which cross at a rather acute angle. In a somewhat rough sense, the house is built across the farther side of a triangle. It is entirely surrounded with a wall of faced stone, surmounted with a latticed crown. The entrance is a simple little gate cut in the wall.

A graveled path rises steeply within and conducts the visitor to the entrance-porch. This is built against one end of the house, the longest side overlooks the garden. The house is faced with cream-white plaster, with white window-frames and green shutters; all the roofs are of red tile. The entrance-porch is a simple and charming "lean-to" built before the door. At each end is a wall, in which is an opening with a segmental arch; they are severely cut through the wall without moldings or ornaments of any sort. On the side of the path the rafters are upheld by two white columns. The door is square-topped, with a frame of narrow moldings painted white, and the door is solidly paneled in small square panels with rounded studs; it is painted green. The ironwork is limited to a knocker, the bell-handle and a lantern on each side. There is a small square window in the upper part of the wall on one side, and bay trees and evergreens in terra-cotta pots and tubs form the essential parts of a very delicately handled color-scheme.

The ornamental front of the house is that overlooking the garden. It consists of three parts; a slightly recessed center, and two slightly projecting ends. Its basic idea is, therefore, quite rigid symmetry, but the architect, Mr. W. G. Rantoul, of Boston, has allowed himself a very considerable latitude in the developments of the parts. The three great arches in the center of the lower story are supported on columns contained within the surface of the wall, but are without outer moldings. The string course above them is carried only from the farther wing around to the great chimney on the entrance front. That there is a series of rectangular windows in the second story, and a small central gable in the roof seems sufficient for the symmetrical

The approach to the entrance porch

The entrance porch

The terrace above the garden

The living-room is finished with oak and has a Caen stone mantel

treatment; for each of the two ends are treated differently. That towards the entrance front has a balcony in the second floor, entered by three round arches; while the other has a roofed veranda on the ground floor, continued around on the inner side. Above it are two rectangular windows which, with a dormer in the roof above each end, complete the chief features of this carefully studied front.

It is quite easy to see wherein the charm of this house lies. It is of moderate size, and hence makes no appeal by reason of its dimensions. But it is a house very carefully studied in every part. It is designed with as little use of ornamental detail as possible, yet the ornament that is used is well chosen, well designed and thoroughly well adopted to relieve the plain solidity of the walls. The house, moreover, is singularly well adapted to its site in a very beautiful manner. An irregular piece of ground that is chiefly sloping offers little inducement for architectural embellishment. Mr. Rantoul has been fortunate enough to produce a highly individual house, perfectly adapted to a very difficult site, so perfectly indeed, that the house seems as well suited to its situation as its situation seems destined for it.

The reception-room is designed in the Pompeian style

The achievement in gardening is no less extraordinary. A terrace, supported by a stone wall, immediately adjoins the outer side of the house. One end—the farthest — is roofed and furnished as an outdoor living-room. At the near end are steps to a lower terrace, where the base of the first wall is densely planted with shrubbery. Here is a path, and then a lower wall, overgrown with vines, which rises from the garden that is spread below its base and which extends to the outer or boundary wall. It is a thoroughly charming spot, much more ample in area than, at a first hasty glance, seemed possible. In the center is a circular

The garden is a beautiful grassed space enclosed by vine-covered rocks and walls

fountain with a jet of water; then spacious lawns, on which are planted a few evergreens and clumps of grasses; the outer borders are everywhere thickly shrubbed. In the retaining wall below the house is a shallow recess with a marble seat, and on the inner side is a vast hillside, partly native rock, but now completely overgrown with vines and plants: honeysuckle, hardy phlox, asters, zinnias, golden glow—exactly the right sort of flowers to grow here in the semi-wild profusion. The stable, hidden by the trees and shrubs, is at the farthest inside corner and is almost completely hidden by the thick foliage in which it is concealed.

The entrance to the house is a small vaulted hall, with as well as from the hall. It has a high wainscot of oak in simple oblong panels, the walls above being treated with rough plaster painted sage-green. The upper borders around the door and window adjoining the fireplace are blue. The ceiling has beams of oak with blue panels. The fireplace is of Caen stone and the floor is hardwood with Oriental rugs. The room is lighted by three great windows with arched tops, which give upon the terrace. It contains some fine old carved cabinets.

Beyond it, and entered from the farthest corner, is the den. This is a small square room, covered with a groined vault, painted blue, with gold stars. It has a paneled oak

The dining-room contains a remarkable collection of old pewter

the stairs to the right under the arcade on which the vault is carried. There is a mosaic floor, and a high oak paneling, above which are Venetian-red tympanums under the arches. The reception-room is immediately to the left. It is designed in the Pompeiian style, developed in light colors. The ceiling is curved, with painted panels and a border in gay colors carried all around the edges. The mantel is decorated with reliefs, and has facings of blue-glazed tiles; above it is a built-in mirror. The walls are pale-blue and are paneled with moldings of white and yellow. The hardwood floor has a central rug, and there is a set of Adam's furniture. The windows have white lace curtains. On one panel hangs an old blue-and-gold mirror.

The living-room may be entered from the reception-room wainscot five feet in height which supports a shelf; the upper walls are rough plaster, left white. There is a built-in seat at the base of the wainscot with brown velvet cushions, and the leather-covered chairs are of the same hue. The fireplace has facings of red brick. A lamp-like chandelier depends from the center of the vault. The walls and shelves are thronged with bric-à-brac.

The dining-room is on the inner side of the house and is two steps above the living-room. It has an oak wainscot five feet in height, with upper walls of French gray and a small classic border at the summit. The ceiling is beamed in oak, with panels of French gray. On three sides of room are large recesses, or open cabinets, built within the walls, paneled throughout and shelved. Here is displayed

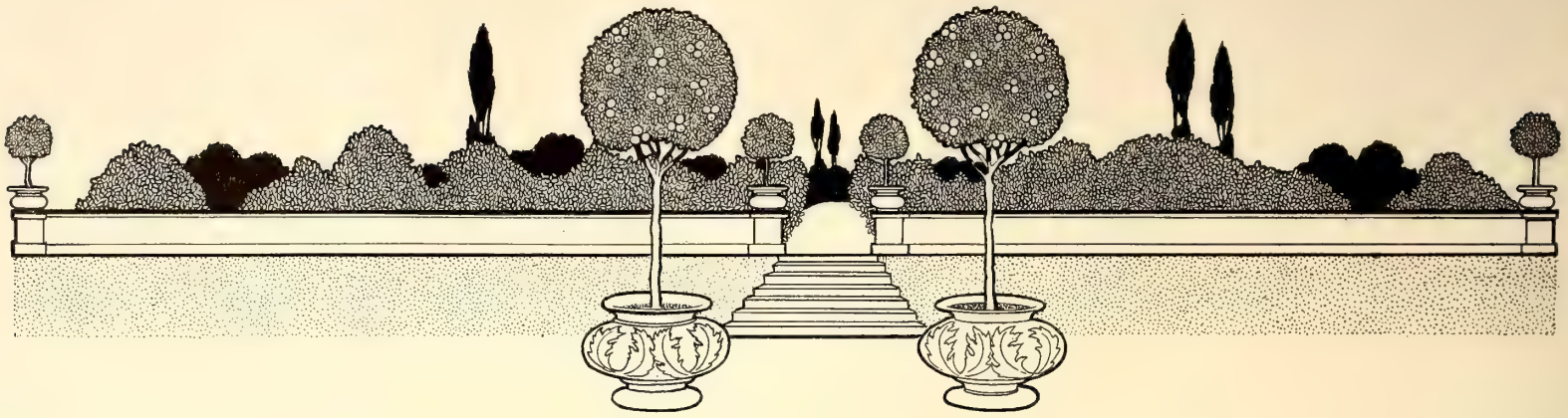
a truly wonderful collection of old pewter, objects of every sort and use being represented here in many different varieties. The central chandelier is pewter, as well as the two great church candlesticks on each side of one of the cabinets. It is a gathering of astonishing extent, and one of the greatest possible interest.

The windows have broad sills and are filled with leaded glass with circular patterns; they are provided with green sash-curtains. The oak furniture is covered with dark-brown leather studded with brass nails. The oak floor has no rugs. The fireplace is of Caen stone with bands of red brick and brick-lining.

Part of the garden wall and enclosure

The interior thus reflects and illustrates the fine taste that has made so much of the garden and adjacent grounds. There is variety and interest within the rooms exactly as there is without in the design of the house.

The den has a vaulted ceiling painted blue with gold stars



The Garden at Hamilton House

By Louise Shelton

"THE garden at Hamilton House is one of the most beautiful gardens in America," Thomas Nelson Page is quoted as having said; and Henry James remarked that there is nothing like it in this country. Once to have seen it, is to wish to be again in that court of flowers. There are larger gardens, and gardens of more elaborate design, but Hamilton House garden is the dream fulfilled of a nature-lover and artist, who, while living in the atmosphere of an old mansion under the shade of ancient elms by the river, wove into the scheme a garden fashioned after the spirit of the place.

In the year 1770, Colonel Hamilton, a prosperous West-Indian merchant, built his home here, possibly from the memory of some Colonial homestead in old Virginia, and Hamilton House on the Piscataqua River, nearly two miles from the nearest railroad station at South Berwick, Maine, still enjoys its happy seclusion. There is no habitation in sight other than the old house itself mirrored in the waters at the foot of the sloping lawn. The place suggests romance, and Miss Sarah Orne Jewett has depicted it in her "Tory Lover." Mr. Page wrote about it in "Miss Goodwin's Inheritance."

Ten years ago its present owner bought the estate covering two hundred and fifty acres of meadow and woodland through which winds the river. House and grounds were passing into a state of decline, but in a short time the rich, though simple beauty, of the time-worn mansion was restored; some additions were necessary, and while retaining all the old lines of its original style, the house took a new lease of life. The dignified beauty of Colonial days adorns the interior, also even to the ancient wall-paper in the main hall reproduced by an English firm.

Hamilton House

Outside, too, age is visible in the broad stepping-stones which take the place of paths and in the luxuriant growth of shrubs and trees. The only new creation about the place is the garden, although to all appearances it is also a part of the past. Within this beautiful enclosure the fancy finds wings, so perfect is the harmony of its color-scheme—so perfect the quiet and the air of time pervading it. Grass paths divide the various flower-beds and connect the four sides. The artist-owner is also chief gardener, and flowers and vines have responded vigorously to her daily toil among them. Probably her masterpiece in garden architecture is the vine-covered pergola or arbor enclosing the garden on three sides: a cool retreat with a river view through its leafy openings. Here, in crevices between the stepping-stones, mosses, grass and little carpet vines have taken root; occasional ferns cluster together in shadowed places, and here, too, I saw some escaped poppy seedlings that have found a sun-warmed niche. In the cool recesses of the vines garden-seats are placed before a vista of flowers, or by the lattice overlooking the water, and at one end of the arbor is the garden tea-room, a cheerful refuge on a rainy day. A high pivet-hedge borders the garden on

A look into the June garden

A spot of quiet peace

The original wall-paper is reproduced

A simple old fireplace

the fourth side, forming a strong background for such plants as hollyhocks, delphiniums, etc., and screening the upper garden—the picking garden—on the farther side. Beginning with June, the favorit old-fashioned summer flowers appear in this garden by the river. Roses, of course, and hardy larkspur, foxglove, poppies, sweet William, campanula, hollyhocks, lavatera, bee balm, peonies and phloxes predominating. There are certain weeks when the blue flowers (slightly relieved by white and yellow) have the monopoly over other colors, and ever afterwards the memory sees tall sky-blue delphiniums in a blue garden. Later, when the seat of honor is given to pink hollyhocks, pink phloxes, etc., mingled with lilies, one feels that the fairest garden ever grown was dressed all in pink. The birds are here, glad for the fountain, and nesting in the tangled arbor vines,—truly a flower garden without birdsong would be an unfinished Eden! Nature and an artist-soul have contrived all harmony for this garden in the hills of Maine, where, though the season is short, the flowers grow to the limit of size and perfection, as if to atone for coming late.

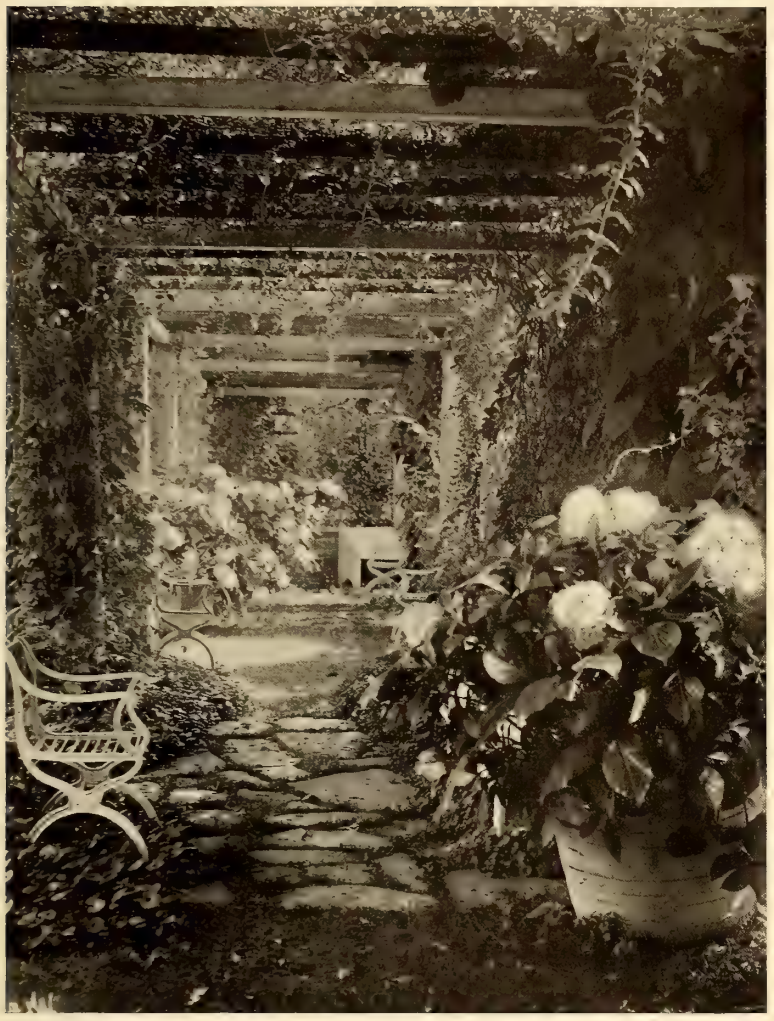
There is an appealing beauty in this fine old place that is amazingly fascinating. I have called it old, and it is old, truly; yet it is modern, as well, in being maintained in a living way. That is to say, it is a house that is lived in, loved for itself, too, put into perfect order, with new garden beauty, each year. I sometimes think it a strange thing that a garden must be cared for and tended so that we who love it may enjoy it the most and get the best of our enjoyment. A delapidated old house is a grievous thing in itself, but a delapidated old garden is to me the worst of all woes. The poor shrubs and flowers, once set out with loving care, have no one even so much as to look at them; the gayest flowers seem to mourn, and put on a sad air as though helpless, as indeed they are, in their solitary and neglected state.

The front door of Hamilton House

But at Hamilton House there is none of this. Here is a garden alive in every part, a garden to enjoy and dream and think in, a garden that yields delight at every footstep. One knows, indeed, that it has been restored, that this rich growth of shrubs and trees, this brilliant blooming of flowers, these luxuriant vines—one knows that all this has been newly done and that daily thought and care are lavished upon this natural splendor. For gardens such as this do

The drawing-room fireplace

The old hall through the center of the house



One side of the pergola bordering the garden

An entrance to the garden

not maintain themselves unaided and much labor and thought has gone into this newer garden-growth.

And this, I take it, is exactly as it should be. A garden was always here since the first stone was laid of the foundation by good old Colonel Hamilton. But more than a hundred years is too long a time for a garden to survive in America, except under the most favorable circumstances and the most unusual conditions; I mean, of course, a continuous survival, with care and attention for the whole long time. We hardly, to our sorrow, do things that way in our most progressive country. The nomadic instinct is still strong within us, and many of us scarce move into a house and get the garden going than we are looking abroad for other abiding places.

So, as things, go, a hundred and forty years is a prodigious time for an American garden to be tended, and nothing of this sort could have been expected of poor old Hamilton House. Yet, to-day, the place needs no sympathy, for it commands only eager admiration. For the house itself, some repair was needed; but this has, in no instance, been overdone, nor, at any point, been more than was necessary. The fine taste shown in this structural work, and on the work within, has been reflected, and, if possible, magnified, by the embellishment of the garden. Fortunately, the basis of beautification was here and the restoration of this glorious old garden was, we may be sure, a task of abounding interest and deepfelt affection.

It is, in any event, a wonderful place to own, or even visit.

Concrete Ornaments for the Garden and How to Make Them

III.—A CONCRETE PEDESTAL

By Ralph C. Davison

SUN-DIALS, statuettes and vases mounted on ornamental pedestals add greatly to the picturesqueness of the modern garden. These pedestals are made in numerous designs and of various materials, such as stone, marble and concrete. The accompanying half-tone illustration, Fig. 1, shows a pedestal made of white Portland cement. It is of simple design, and one which lends itself nicely to the material, inasmuch as the forms in which to cast it are easily made. Fig. 2 is an outline sketch of the pedestal, in which are given its general dimensions, and Figs. 3, 4, 5, 6 and 7 show details of the molds in which it is cast. Fig. 8 shows the various parts of the mold before assembling. Fig. 9 shows the shaft-mold assembled in position ready to pour, and Fig. 10 shows the three finished pieces of the pedestal before setting them up.

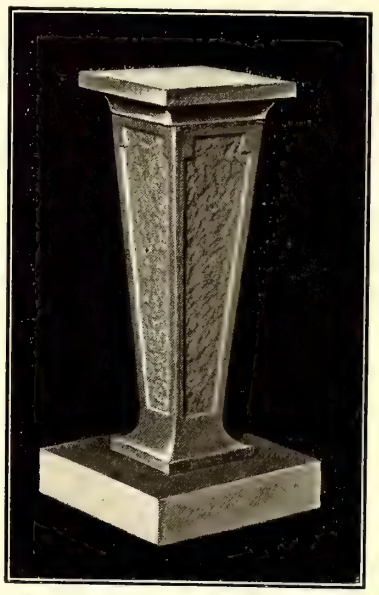


Fig. 1—Sun-dial made of white Portland cement and marble dust. Designed and executed by the author

The molds should all be made of 1-inch lumber, and the dimensions given should be followed closely. The base-mold shown in Fig. 3 consists of nothing more or less than a square box with sides 5 inches high. In the center of the bottom of this box is placed a tapered core, so as to produce a hole, in the cast, to correspond in size to the outside dimensions of the plug on the bottom of the shaft of the pedestal, as shown in Fig. 10. The mold for the top or cap of the pedestal is shown in Fig. 4. This like the base-mold is merely a square box. It is 4 inches deep, and a ½-inch tapered plug is placed in the center of its bottom as shown, in order to produce a ½-inch hole in the bottom of the cap in which to insert the ½-inch reinforcing rod, which passes through the entire length of the shaft, as shown in the assembled drawing, Fig. 7. Strips of 2-inch quarter-round stock molding mitered at the corners, as shown, are placed in the bottom of this mold in order to give the desired outline to the lower portion of the cap. The main shaft-mold is made in three pieces, as shown in Fig. 7. Fig. 5 shows the details of the sides of the main part of the shaft-mold. The recessed panels shown in the sides of the pedestal in Fig. 1 can either be cast in or it can be tooled out, after the pedestal has been cast, by means of chipping with a hammer and chisel. If it is desired to cast it in, rather than to tool it out, a panel or negative mold, as shown at *C*, Fig. 5, should be attached to the inner side of each side of the shaft-mold as shown. The edges of this negative mold for the panel should be beveled off as indicated in the sectional drawing, so as to allow it to be released readily from the cast when removing the forms. Details of parts *B* and *C* of the shaft-mold are shown in Fig. 6. Part *B* is a bottomless box 10 inches square on the inside, with sides 6 inches high, and in it are secured, on all four sides, and mitered at the corners as shown, pieces of 2-inch quarter-round stock molding. These are securely fastened to the sides 1 inch from the top. Part *C* of the mold is made of four pieces of 1-inch board as shown, on which is built up the cone which forms the lug on the bottom of the shaft. Part *A* of the mold at its top should have secured to it, on all four sides, pieces of 2-inch by 1-inch tapered strips, as shown by the shaded portion at *d* in Fig. 7. The outside dimensions of these strips should be such so that the inner portion of part *B* fits over them snugly.

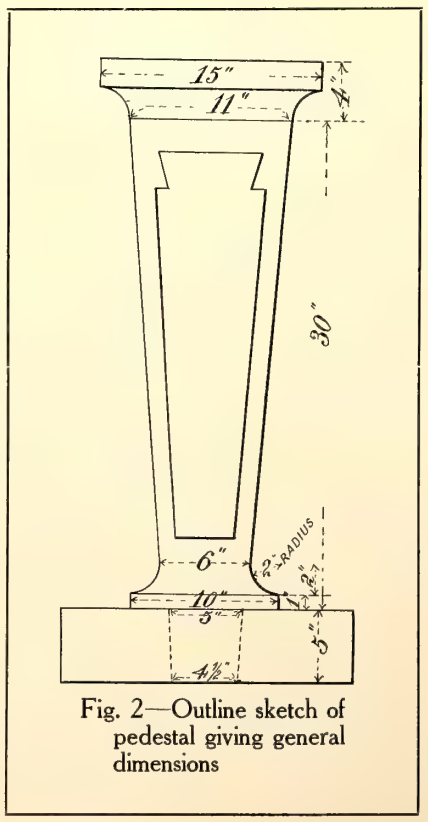


Fig. 2—Outline sketch of pedestal giving general dimensions

The bottom of part *A* of the mold should have a 9/16 inch hole ½ inch deep bored in its center in wihch to place the ½-inch steel reinforcing rod, as shown. After having completed the various parts of the mold as described above, sandpaper the inner surfaces of them and give them two coats of shellac; let this dry thoroughly, and then oil the inside surface well with a fairly thin oil. Now assemble the shaft-mold, letting section *A* stand on end, as shown in Fig. 7. Place section *B* in position as shown, care being taken to let the quarter-round molding rest snugly down on the pieces *d* of section *A*. Then place the steel rod in position, and commence to deposit the concrete mixture. If a white shaft is desired, use one part of white Portland cement and two parts of white marble screenings ranging in size from dust up ⅜ inch. Mix these together dry, and then add enough water to make a fairly thick paste. Fill the mold flush with the top of part *B*, tapping the sides and jarring part *A* of the mold occasionally to settle the concrete mixture as it is being deposited. When the concrete is flush with the top of section *B*, place section *C* in position and proceed to fill it flush with the top. Allow the concrete to set or harden in the molds for at least twenty-four hours before attempting to remove the molds. In securing the molds together use as few nails as possible, and in removing the mold from the cast, great care must be taken in loosening them, so as not to injure the casts. In removing the shaft-mold, take off part *C* first, then part *B*, and finally section *A*. The base and cap molds should be filled with the same mixture as above, and should also be allowed to set for at least twenty-four hours before removing the forms. It would be well to insert in the base, when casting, four pieces of ½-inch round or square steel reinforcing bars

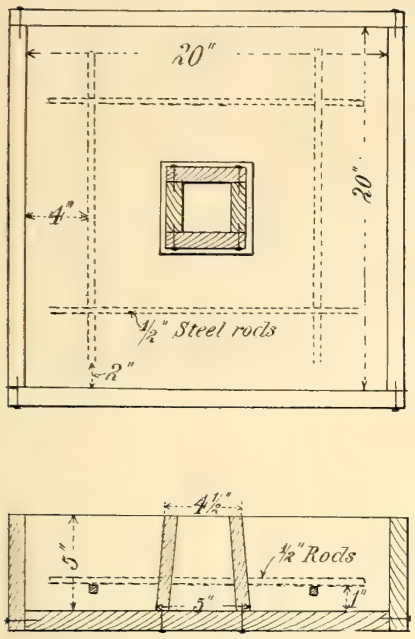


Fig. 3—Mold for base block of pedestal

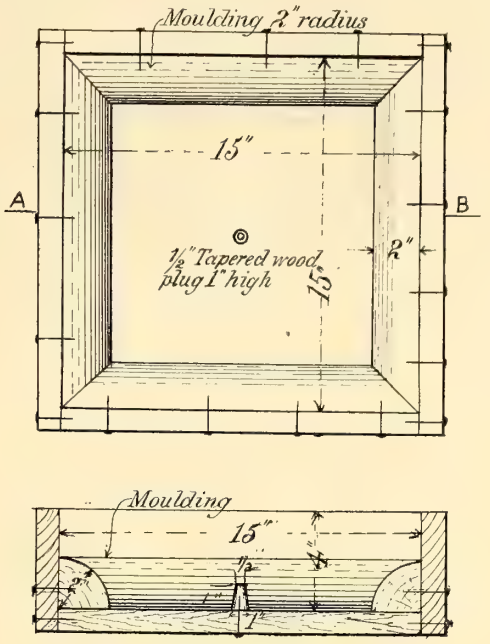


Fig. 4—Mold for top or cap of pedestal

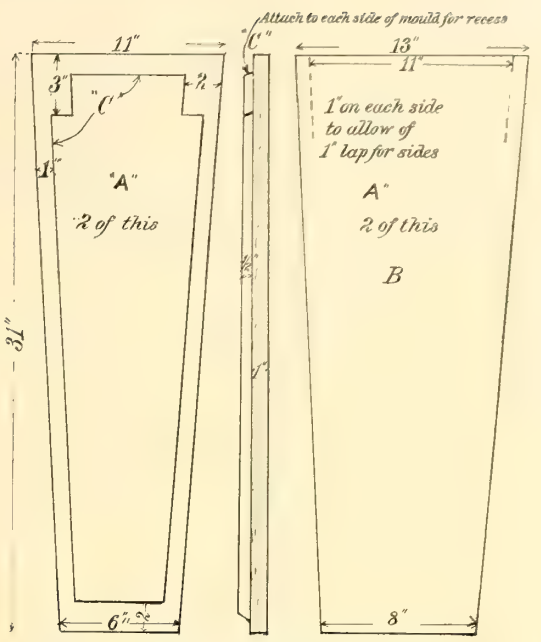


Fig. 5—Detail of sides of main part of shaft mold for pedestal

placed as indicated by the dotted lines in Fig. 3. These will add greatly to its strength, and will prevent it from cracking in case the foundation, upon which the pedestal is placed, is not perfectly true and level. If by any chance the casts should be injured, in removing them from the molds, they should be well wet down with water and pointed up with a mortar made of 1 part white Portland cement and 1 part of marble dust mixed with enough water to produce a fairly thick paste.

After having pointed up the various parts of the pedestal they should be allowed to stand for a short time, and then all of the pieces should be well soaked with water occasionally every day for at least ten days. This wetting down is known as the curing process, and it should be well attended to, as the hardness and durability of the product produced depend largely upon the care taken in properly curing the casts.

After the pieces have become thoroughly hardened or cured they can be assembled or set up in position, as shown in Figs. 1 and 2. The surfaces of the parts which are to be joined together should be sprinkled with water, and covered with a thin layer of cement mortar composed of 1 part of white Portland cement and 1 part of marble dust. They should be placed on each other, and worked around with a twisting motion until bedded in place. The surplus cement which is forced out at the joints should then be smoothed off, and the pieces allowed to set, without being disturbed, for from one to two days, in which time they will be firmly secured in place.

By using the mixture of white Portland cement and marble chips or screenings, as stated above, the effect produced will resemble that of white marble. If one prefers the gray color of ordinary Portland cement, the mixture used should then be composed of 1 part Portland cement to 2 parts of good clean sand and 2 parts of trap rock screenings or pebbles not to exceed ½ inch in size. If a sun-dial is to be placed on the pedestal, it need not be cemented in place. They are usually made of brass or bronze, and their weight is sufficient to hold them down. When placing a sun-dial, always see that its vane points to the north and that the pedestal is placed in the full rays of the sun. It would also be well to prepare a good solid foundation for the pedestal to rest on, for if this is not done it is apt to settle as the ground becomes soft in the spring time. In fact, all heavy garden furniture should be provided with good solid foundations. These foundations should be from 2 to 3 feet deep, and in size should correspond to the size of the base of the piece which is to rest upon them. To prepare a foundation of this kind, all that is necessary is to dig a hole of the desired size and depth and to fill it with a mixture of 1 part Portland cement, 3 parts of sand, and 5 parts of broken stone or gravel. Add enough water to this to make it of the consistency of a thick pasty mass. Tamp it down well and level it off and allow it to set or harden for twenty-four hours, in which time the piece can be placed in position on it.

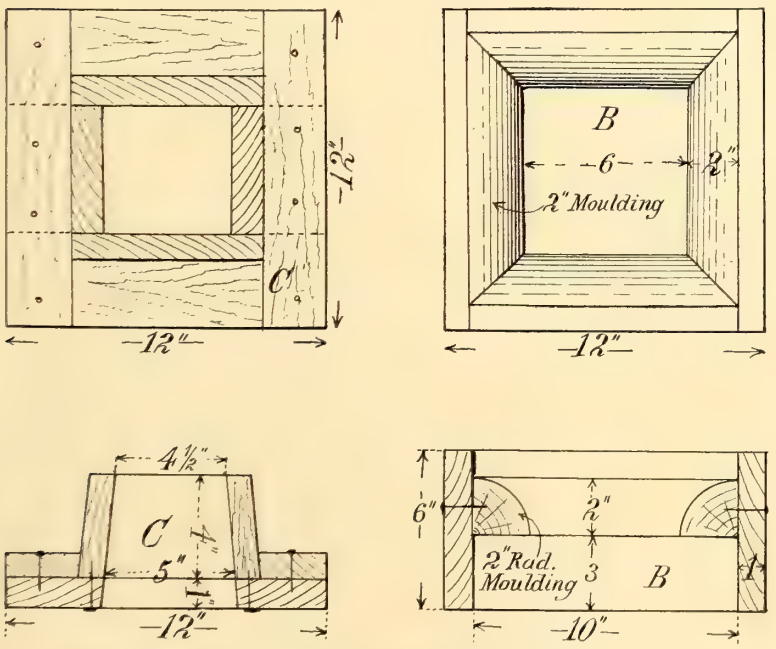


Fig. 6—Details of parts C and B of mold for shaft of pedestal

In undertaking the manufacture of the various garden ornaments of concrete described in this series of articles, the amateur should be prepared, not only to proceed with the utmost care, but to exercise the utmost patience and discretion. The work is in no sense difficult, as must, I think, be apparent to any one who has followed the articles to this point; but it is exacting and precise, and the temptation to hasten and to forward the work unduly is sometimes apt to be very keen. This temptation, for such it is, should be promptly resisted, since such a procedure is very apt to lead to indifferent work, which, in the

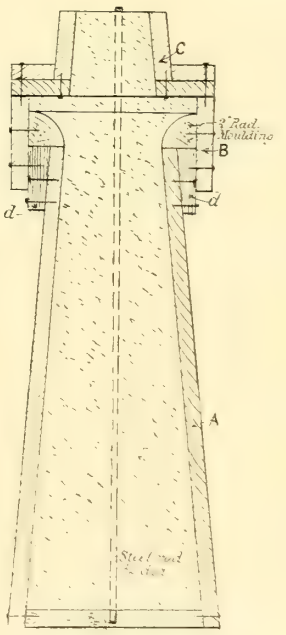


Fig. 7—Showing wood mold for pedestal shaft assembled and in position to pour

end, would be highly unsatisfactory.

It is well, therefore, to insist on these points, since in most mechanical operations of whatever kind soever this temptation is often present and is frequently quiet eagerly availed of. In making concrete garden ornaments the work must be carried out with the utmost care at every stage. The molds and patterns must be carefully made; the joints must be tight; the surfaces of the wood smooth and even; the nails, when it is necessary to remove them, driven in at exactly the right angle and just far enough to permit them to be removed without injuring the model. The work of dissecting the mold is often more delicate and complicated than the labor of putting it together, and every part must be accurately and nicely adjusted and capable of being removed and readjusted. The labor spent on this preliminary work will be more than repaid in the satisfaction with which the final product—the particular article that is being manufactured—will be viewed in the end.

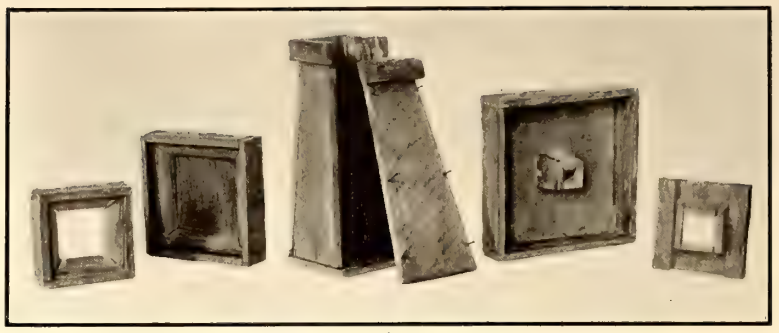


Fig. 8—Parts of mold before assembling

And after the mold is made and tested—for one must be very certain that it is both well made and will yield the result contemplated from the beginning—comes the preparation of the concrete. I have already referred to this part of the work, but speak of it again at this point, because every single operation in the whole matter is essential, and the care and pains that is given to one part must, with equal care and pains, be bestowed upon every other part. It is presumed, of course, that those who may undertake the task of making concrete garden ornaments from the directions given in this brief series of articles are prepared to follow the very detailed directions that have been given. It is for this very reason that the directions have been presented in such detail, and since this discloses the way by which the author of these papers has repeatedly obtained the results described and illustrated, it is earnestly urged that his experience be respected and the things described as being done be done in that way and in no other.

Fig. 9—Shaft mold assembled and in position ready to pour concrete

A word or two may be introduced here on the use of these concrete garden ornaments. In some cases the making of the mold may be looked upon as quite a formidable task, and since a well-built mold may be available for use many times, it may appear a wise economy to manufacture a considerable number of objects from it. I want to suggest that this is not always the thing to do. A successful garden is not one crowded with ornaments of identical pattern, nor with many ornaments of any pattern, unless they have a definite place in the general ornamental scheme. One may use a single sun-dial pedestal in a given garden, but one would hardly use half a dozen. One might have a garden bench or two, but hardly a whole row that might accommodate a multitude of people.

One may experiment, of course, to one's heart's content, and the more one does so the greater will be the zest manifested in work of this description; but, like all garden work, and, indeed, all architectural work, it must be done with a definite end in view if the result is to be wholly satisfactory. And the work must be satisfactory in the end, and completely so, or it had better not be undertaken. If one has use for a garden vase, or a dozen of them, the work of making them will be found not only agreeable, but eminently satisfactory in the ornamental effects obtained. There are many other garden ornaments that one can use in multiple to advantage, but always with a general scheme, a completed plan in view. It is easy to realize an ideal when such a standard is maintained.

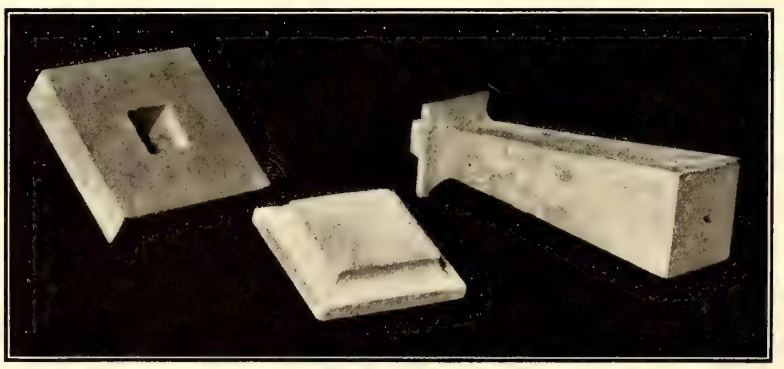
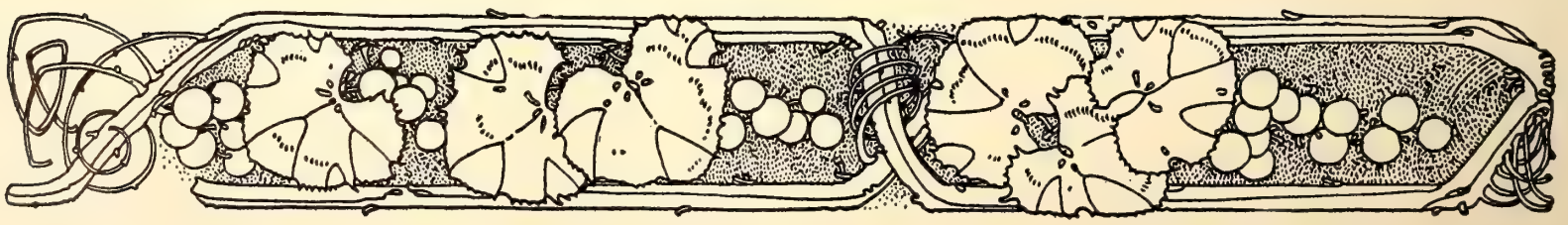


Fig. 10—The finished parts of pedestal before assembling



House of J. H. Hammond, Esq., at Wynnewood, Pennsylvania

By Marshall S. Wheeler

THE charming house of J. H. Hammond, Esq., at Wynnewood, Pa., is delightfully situated on a shady site in that prosperous and progressive Philadelphia suburb. The country thereabouts, as all must know who have seen it, if no closer than from a railway-car window, is one of the most delightful that surrounds any great American city. I dare not venture so far as to assert that Mr. Hammond was fortunate enough to obtain the most delightful site of all, but surely it was attractive enough to call forth sympathetic treatment from his architect, Mr. Carroll Thayer, of Swarthmore, one of Wynnewood's neighboring towns. A delightful site, it seems to me, should always inspire the creation of a delightful dwelling. The two go together as naturally as can be, and I offer the accompanying photographs as excellent evidence, and the best, of the admiration I feel for this quiet little house that seems so exquisitely fitted to the trees and woods amid which it is built.

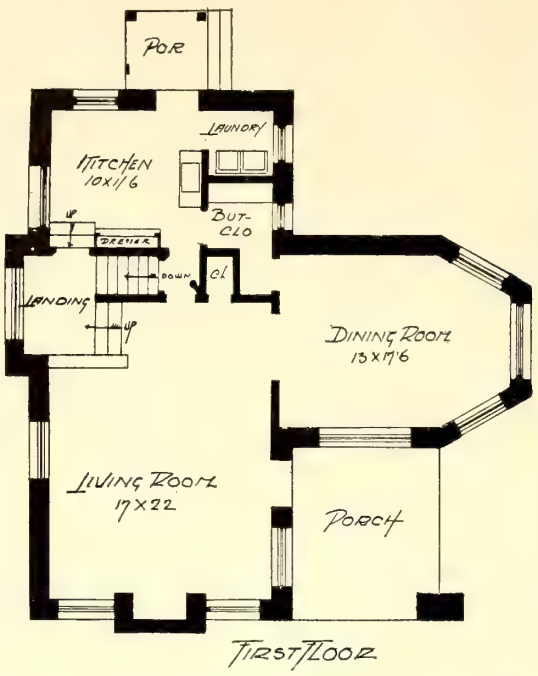
It is a stone house, as are many of the better houses in this vicinity, with a great sloping shingled roof, whose lofty gables on either end are shingled to the apex. On the front, the roof is broken by a dormer, that rises to a height of two stories and which gives so much interest and so much character to the exterior. Its propecting eave is pierced, on one side, by the great stone chimney that rises up from the wall below, cutting through the main roof and rising to a sufficient height above the gable of the dormer.

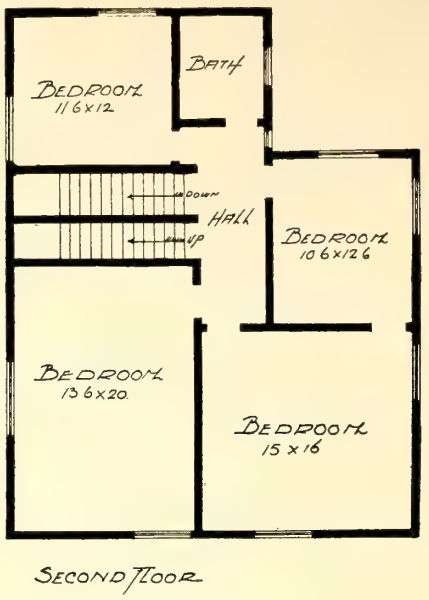
The silhouette elements of the design are thus very varied and highly decorative, but there are a number of other features that help to make this a thoroughly interesting bit of architecture. There is an entrance porch on one corner of the front, a porch occasioned by a recessing of the outer walls, with a fragment, as it were, left on the outermost angle to support the great roof above. Here, beneath the porch, is the main doorway, on the side wall, and not facing the street, a delightful arrangement for privacy that one seldom sees, yet which, now that we see how it is done—and why—is very clear and simple. In the main wall are two pairs of twin windows, with leaded glass in diamond pattern, and between them is the base of the chimney, to which I have already referred. And this is all, unless one includes, as indeed one must, the great stone bay on the side, which we presently discover to constitute a considerable portion of the dining-room.

Being but a simple little house—and I must insist on this

A charming house of stone with its two-story roof

point—the interior has, on the ground floor, but three rooms. These consist of a living-room, a dining-room and a kitchen. The living-room is entered immediately from the main doorway, which has no vestibule nor introductory or separating passage, since none is needed, as quite ample protection is afforded by the entrance porch under which it stands. It is finished in Flemish oak, wood-paneled to the window-sills, above which is a paper in brown, red and green. A plate-rack is carried completely around the room, and serves the purpose of a frieze. In one corner are the stairs leading to the second story, and in the center of the front wall is the fireplace, for which the great outer chimney was built.





Opening from this room on the right, is the dining-room. The meaning and purpose of the bay-window on the side is now made clear, for it supplies a brilliant illumination to this room, as well as much-needed floor space. The walls are treated with a mustard-color striped paper, and the general character and decoration are in happy harmony with the artistic character of the living-room.

In one corner is a door leading to the butler's pantry, which, in its turn, is directly connected with the kitchen, which thus occupies the innermost part of the house and is at a point the farthest removed from the street. Like all good kitchens, it is well-furnished and equipped with all the necessary fixtures of the best types. Mention should, however, be made of the laundry, which is contrived in one corner and is actually separated from the kitchen proper. It is an arrangement seldom found in houses so modest as this, but is exceedingly convenient and useful.

The second story discloses four bedrooms and a bathroom, the latter being located above the laundry. All these rooms are charmingly appointed and conveniently related to each other.

There is a charm about this house both within and without, and it is eminently attractive in every way. Its interior provides more space than its exterior suggests, and its fittings and furnishings are in the best of taste.

The living-room with its great fireplace

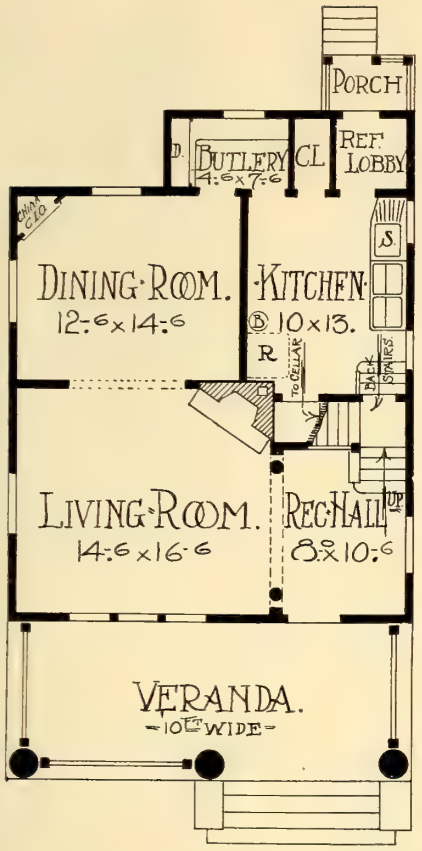


Fig. 1—First floor plan

Fig. 2—The house is delightfully shaded with fine old trees

A Group of Modern Houses at Nutley, New Jersey

Costing From $1,000 to $5,000

By Francis Durando Nichols

NO ONE, who has not set out to do it, has any notion of the exceeding difficulty of erecting a good house for one's own use at a very moderate cost. It is very much easier to do it for another fellow than for yourself, as you always know exactly what other people are entitled to, at least for a given sum of money, and you also know that certain things very essential to your own comfort are quite unnecessary and uncalled for when it comes to someone else. But start to do your own building for a set sum, and, in most cases, you will wish you hadn't.

But in all seriousness the problem is a difficult one, and it is becoming more and more difficult every day, not only with the increased cost of building material and of labor, but with the demand for new conveniences in the home, new appliances, many of which are very useful and desirable, but since every addition to a house means an additional

Fig. 3—A roof with ample room for two stories

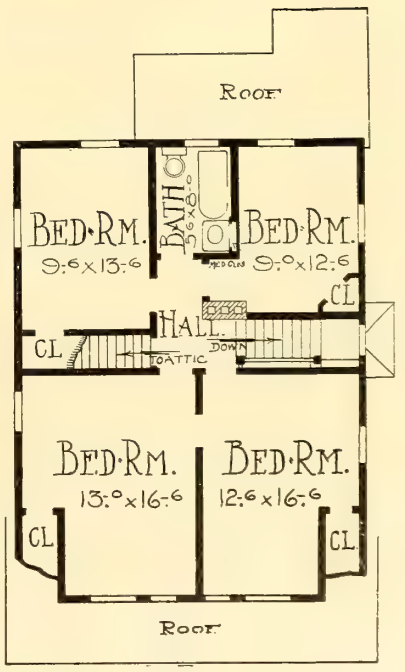


Fig. 4—A second floor plan

Fig. 5—The bay windows are a distinct help

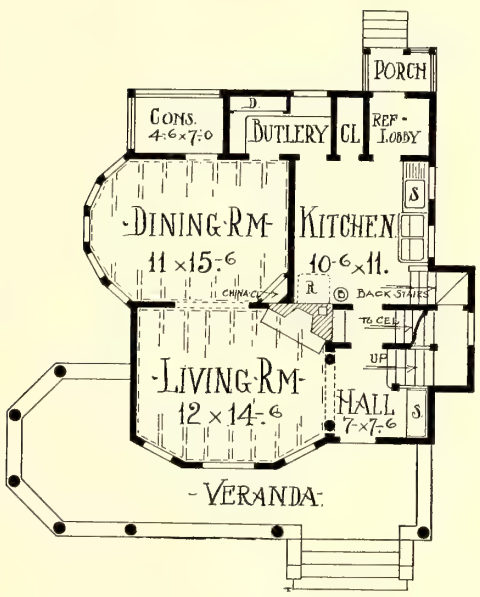


Fig. 6—First floor plan

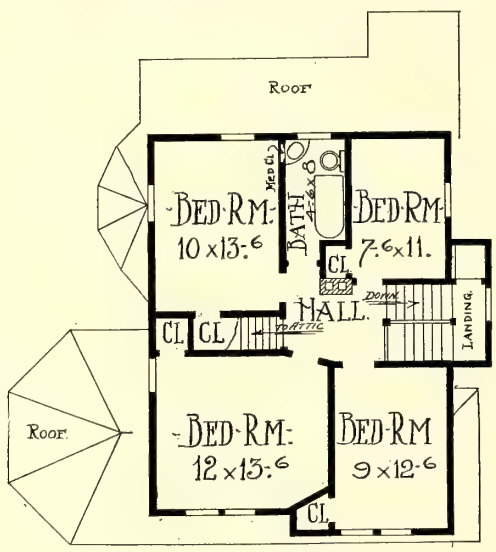


Fig. 7—Second floor plan

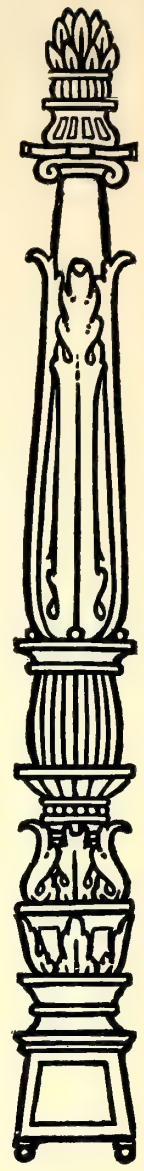


Fig. 11—A real

Fig. 12—First floor plan

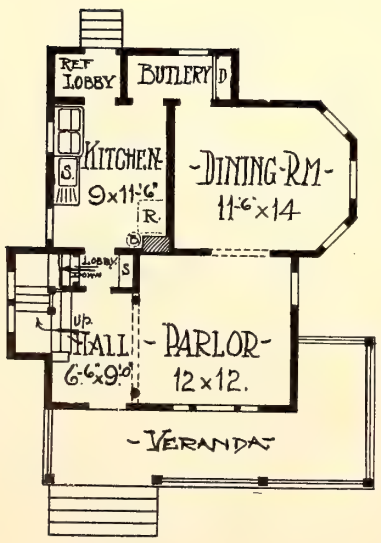


Fig. 8—First floor plan

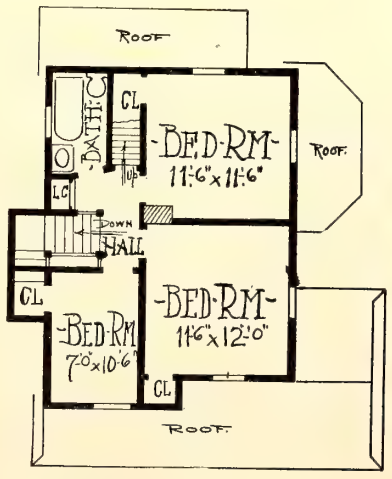


Fig. 9—Second floor plan

Fig. 10—A porch is quite essential

e although small

Fig. 14—A combination of materials

Fig. 13—Second floor plan

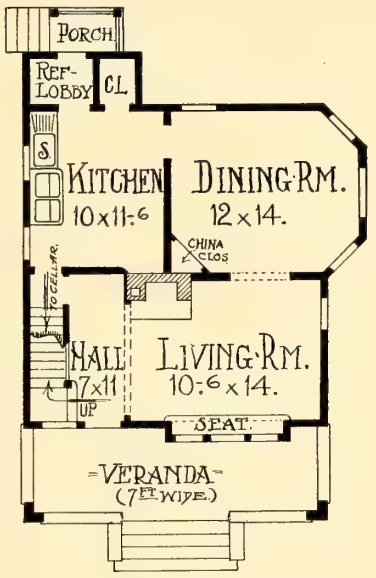


Fig. 15—First floor plan

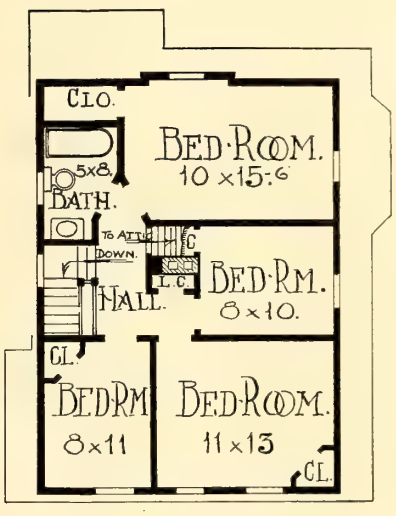


Fig. 16—Second floor plan

Fig. 17—A stucco and shingled house

Fig. 18—First floor plan

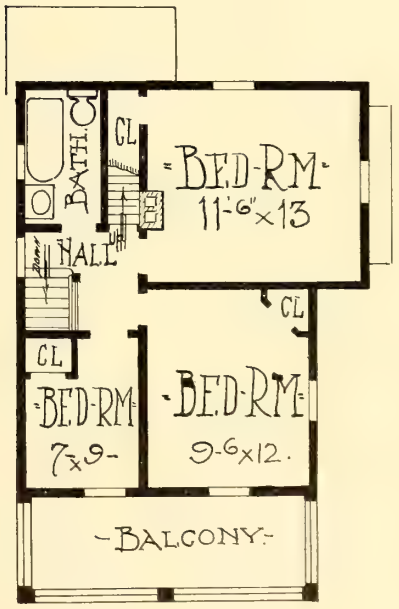


Fig. 19—Second floor plan

Fig. 5—The bay windows are a distinct help

Fig. 6—First floor plan

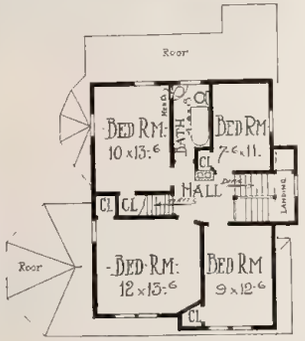


Fig. 7—Second floor plan

Fig. 11—A real house although small

Fig. 12—First floor plan

Fig. 13—Second floor plan

Fig. 14—A combination of materials

Fig. 15—First floor plan

Fig. 16—Second floor plan

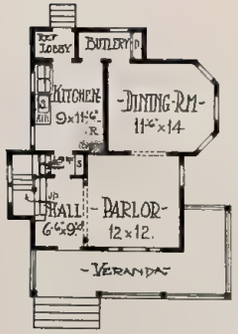


Fig. 8—First floor plan

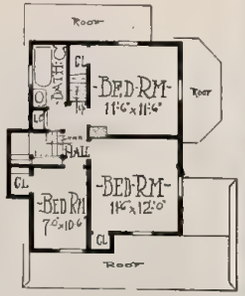


Fig. 9—Second floor plan

Fig. 10—A porch is quite essential

A Group of Modern Houses at Nutley, New Jersey Costing from $1,000 to $5,000

Fig. 17—A stucco and shingled house

Fig. 18—First floor plan

Fig. 19—Second floor plan

expenditure, the total sweeps on with a quite amazing rapidity and increase of proportion.

The good small house, that is, the house that is entirely adequate for modern needs and for every one's necessities, is, therefore, a comparative rarity. It is often positively scarce, particularly when one is searching for it; for even when found, there will, as likely as not, be reasons why it is not exactly available. It may not, for example, be in precisely in the same neighborhood one desires; it may not be precisely the thing sought; or it may be so very good that there is sure to be something better. There are always a multitude of reasons for not taking a house, just as there are often many reasons for doing so. Fortunately, it is not my present purpose to hunt out houses for any one in particular, nor for a given group; but I esteem it a pleasure and a good fortune to be able to say a word or two concerning a new group of houses of very moderate cost, built at Nutley, N. J.

To build a modern house that will cost not more than from one thousand to five thousand dollars is an accomplishment which very few architects and owners have as yet been able to carry out to a successful end. But that it is possible to do so and do so in a very agreeable and charming way, is delightfully shown in the group of houses

Fig. 20—A house of moderate cost with no suggestion of economy

Fig. 21—An agreeable grouping of roof, dormer and porch

illustrated in this article. They were all designed by one architect, Mr. William A. Lambert, of New York, who has certainly most clearly demonstrated, in these examples, the highly important truth that it is possible for almost everyone to have a house of his own. Cost is, of course, the most essential element in the whole problem, although other matters must be considered. If one is not able to purchase a home outright, there are questions of ways and means to be considered which every one must solve in his own individual way. But moderateness of cost is, for most people, the first and chief consideration, and the value of these houses at Nutley, as illustrations of what has been done in one locality in a thoroughly excellent way, is very pronounced.

Another important factor should be borne in mind in considering houses of moderate price, and that is that the thousand-dollar house can not have the ornamental aspect nor possess the interior conveniences of the five thousand-dollar house. It is most essential to keep this in mind, for many house-purchasers, I fear, expect to get as much for a thousand dollars as one's neighbor has obtained for five times this amount. If this were possible, why build any five thousand-dollar houses at all? The really important fact is that the thousand-dollar house may be a

home, and a real one, to which one may add from time to time as circumstances or means may suggest.

All of these houses are beautifully situated on a hilltop overlooking the surrounding country. They are well built, with stucco or shingled exteriors, while in some both stucco and shingles are used in combination. The shingle-work is treated with shingle-stain, and the flat exterior woodwork is painted with two coats of lead and oil.

The interiors are stained in brown, green and Flemish, and are finished with a dull wax finish for the principal rooms, and hard oil finish for the other rooms. All the walls are covered with artistic paper.

Each house has a reception-hall, living-room, dining-room, butler's pantry and kitchen on the first floor, and from three to four bedrooms and a bathroom on the second floor, according to the cost of the dwelling. Each third floor has one servant's bedroom and ample space that they may be finished for other rooms when desired. The bathrooms are tiled and are provided with porcelain fixtures and exposed nickelplated plumbing.

Fig. 22—A stucco house

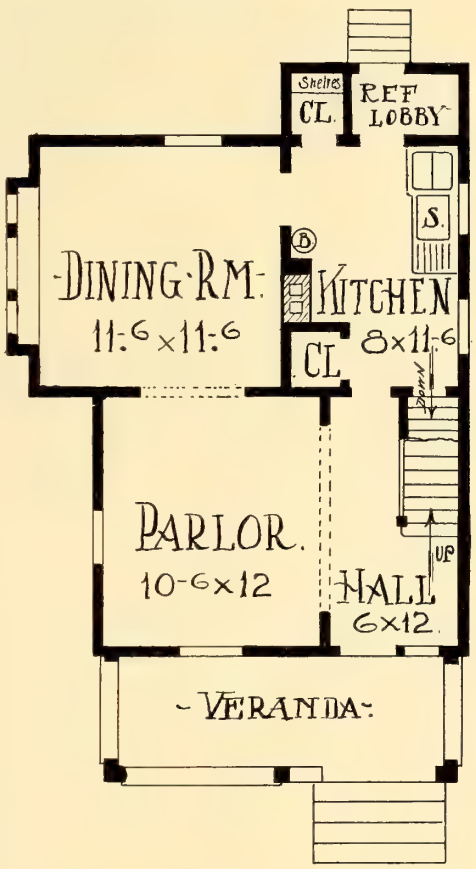


Fig. 23—First floor plan of Fig. 22

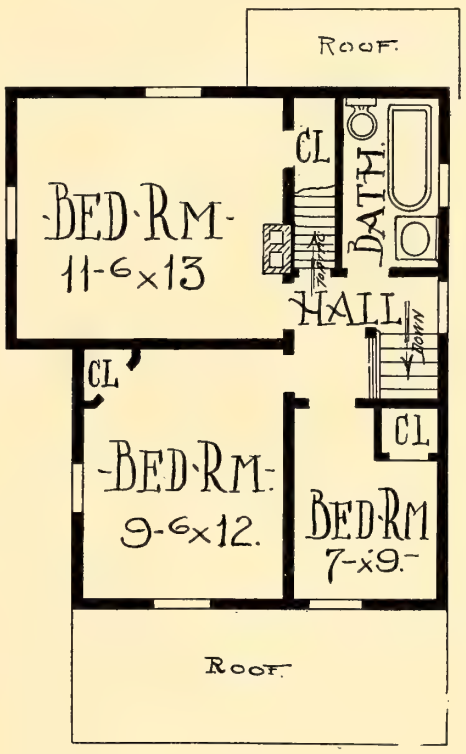


Fig. 24—Second floor plan of Fig. 22

In so numerous a group a considerable variety is provided in the interior treatment. Thus, one house will have a staircase of the Mission type, with oak railings, newels and window-seats, lighted with a stained-glass window on the landing. In another, the staircase is of yellow pine. In one house the living-room has a fireplace of golden mottled pressed brick with a mantel-shelf; the dining-room has china-closets built-in, and a plate-rail around the room. In the more expensive houses the trim is chestnut, with the exception of the kitchen and bedroom, which are finished with cypress. In the other houses the trim is cypress. The kitchens of the various houses have a closet, a lobby large enough for an ice-box, white enameled sink, laundry-tubs and a range. Each cellar has a cemented bottom and contains a hot-air furnace and fuel-room.

All the houses are thoroughly equipped with hot and cold water, gas, clothes-poles and screens for the windows, and each plot is nicely pathed and graded. Naturally enough, the house costing but a thousand dollars, while built and finished in a substantial manner, does not include the finish or conveniences that are provided in the more expensive house. But each one is an excellent type of its kind, and not only offer interesting subjects of study, but promise to be admirably adapted to the comforts of a real home.

Bedroom Window Curtaining

By Mabel Tuke Priestman

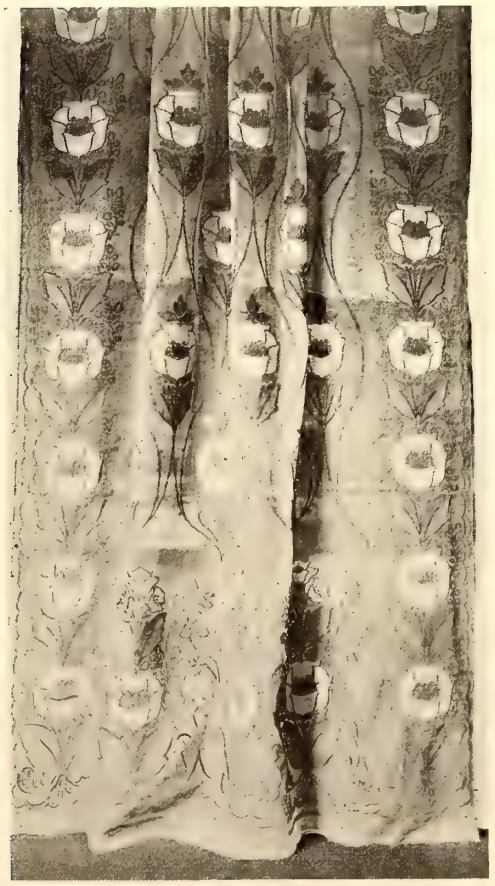
THE curtaining of windows gives an indescribable charm and finish to either bedroom or sitting-room, and too much thought and care can not be given to this all-important choice. It is not necessary that something new should be found, but it is of importance that whatever we get should be suitable to the surroundings.

While nothing is better for sash-curtains than sheer materials of cream or white against the glass, we are by no means restricted in our choice for inner curtains, and these should add color value to each room. In the quest for something new, we are too apt to overlook the good old standbys that have been with us for so long, and a reminder of many of their good qualities should not be out of place.

Twenty-five years ago Java prints could be obtained in many colors and designs, and, although they have undergone little change, they have outlived other curtains many times their cost. The designs printed on them do not fade with countless washings, nor with year after year's exposure to the sun.

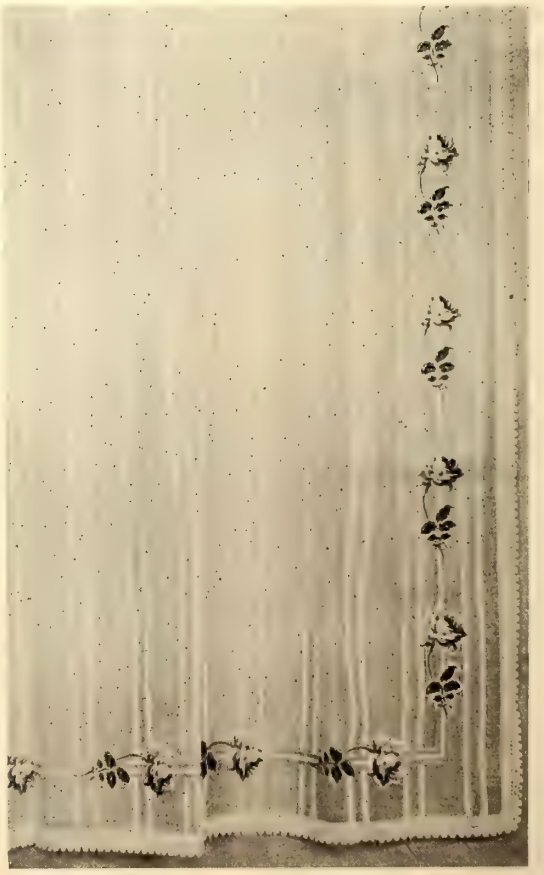
Our illustration of a corner of a bedroom shows a Java print curtain that has been in use for many years. The groundwork is of ivory-white and the Eastern palm-leaf design is in reds and yellows. The lower part of the curtain has a dado effect, repeating the colors of the upper part of the curtain. The cream cotton groundwork does not hinder the light from pervading the room, and yet a charming touch of color is added by using such a curtain. The pattern in the wall-paper repeats the red and yellow of the curtain, and the rug also has the same color scheme. Java-print curtains are not confined to the Eastern designs, as floral motifs are frequently to be found, espcially among the blue and white ones. They are very useful for draperies in summer cottages, as they can be utilized in the downstairs rooms with excellent results. They are sold in greens, yellows or blues, and rich warm colors, and yet the groundwork is invariably pale coffee color, ivory, or white. Table-covers can usually be obtained to match the curtains.

Closely allied to Java prints are the cretonnes which possess the rich coloring of the Orient. The rich blues, reds and yellows of this cretonne can not be equalled for draperies, in a handsome bedroom furnished in mahogany. It is ideal for draping a four-poster and for inner curtains,



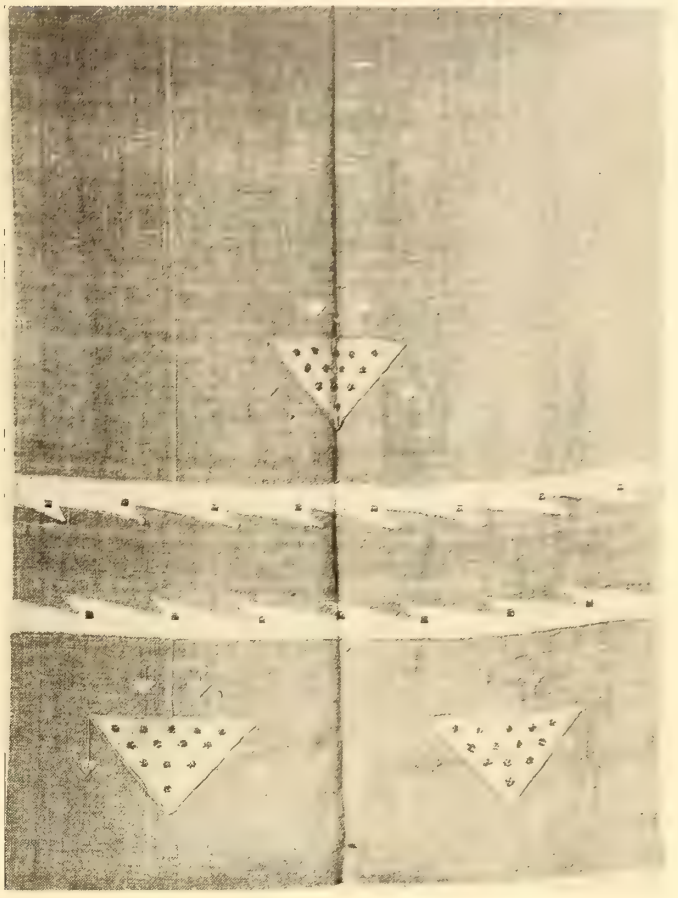
A new cretonne

A handsome design



Striped muslin with appliqué of cretonne

Bedroom with Java print curtains



A novel curtain

and comes in admirably for covering furniture, especially for high-back winged chairs. With such a voyant design, it is essential that the walls are plain, and these could either be yellow, blue or écru. A delicate stripe, devoid of pattern, could also be used in conjunction with such a cretonne. It can be used for slip-covers, for sitting-rooms, its strong, rich coloring blending with the Oriental rugs, when the striped Holland slip-covers would give a dreary unfurnished appearance to the room.

There are several good cretonnes of this character to be found this season. The trouble is, we are apt to overlook them and select something in their place entirely without character.

Madras curtains need no introduction, but they are not sufficiently used, considering their artistic qualities. They fall in such soft folds and yet possess the richness of color of a heavy-lined curtain. The madras illustrated shows a blue and green design on a coffee-colored ground, not a common combination of coloring. Such curtains could be used in bedrooms or in sitting-rooms in the country. They are admirably adapted for curtaining long hall windows, and give the effect of stained-glass without the glare of the uncovered window. They can be purchased by the pair, and the designs are almost always of the best. In country homes we often have opportunity for a daring color-scheme, and, while there are numerous wall-papers of strong design, there are very few draperies that can be used in conjunction with them.

The conventional thistle in striped effect is one of the new cretonnes and could be converted into an appliqué for a plain curtain. It comes in several color-schemes, but each one is strong and dominant. One of the outside stripes could be run down the side of each curtain, and the cross-bar with the thistle across, and above it, could be used on the bottom of the curtain after they had been cut out from the background.

A group of five thistle-heads could be used for a chair-seat, or for a pillow, by cutting them out of the cretonne and not altering the design, but retaining the connecting-stems and cross-bar. The outline must be held in place by embroidery, which would act as a much better foil than the tiresome background of the cretonne.

Bobinet is another unfailing standby, but is "rehashed" each year with something new. One of the late arrivals shows the bobinet with an appliqué of cretonne and braid. The cretonne rose has been cut out and applied to the bobinet, and all is held in place by a narrow appliqué cord applied with the sewing machine. Strength is given to the edge by the braid border. Such a curtain could be used in practically any room, and yet is inexpensive when the labor of making them is taken into consideration.

The same idea has been carried out in the cheap striped muslin curtain. The cretonne rose and stripe has been applied to the muslin and is held in place by a narrow white cord. The curtain is bound at the edge by a braid of crochet effect. Such a pair of curtains can be bought for less than $3.00 and yet would add a distinctive touch to any bedroom. The idea could be carried out at home by buying a striped cretonne that harmonizes with the wall-paper and would be pleasant and easy to make. Braid is very much in evidence in the new curtains. They are not difficult to launder and have excellent wearing qualities.

The Beauty and Economy of Stucco

By John A. Gade

WHAT to do with an old country-place—a tumbled-down brick farmhouse, a time-worn, weather-beaten barn, an old shingled or clapboarded frame structure? It is a question that faces us frequently, as we turn over in our mind whether we can save it at all, or how best to protect or rejuvenate the hopeless looking exterior walls of the cottage we would fain picture as a future modest home. Stucco the walls. It is the answer to the question. You obtain the best results, and, in the long run, also the cheapest and most durable ones. Whatever the outside finish of your old building may be, whether stone, brick, clapboards, shingles, or novelty siding, the stucco may be surfaced, and, if properly put on, with almost equal success. And putting it on does not necessitate large quantities of expensive materials, trained and skilled labor—simply the care and knowledge of how to place it properly. With the assistance of a willing farmhand, you might yourself stucco your building, especially if you practised upon small surfaces and samples on the walls of some doomed shed.

The old porch is retained with Colonial dignity

Your first impulse, upon looking over your structure, is to calculate the cost of making the walls tight to wind and weather and of a more seemly appearance. The mortar has loosened and fallen out from the joints of the old bricks, or the shingles have rotted, or the clapboards look as devoid of paint as an old stump in a bog. It will cost you quite a little in mason labor and painting to renovate; and carpenter labor and material, too, if the structure, as probably is the case, is of wood, and in the end you have a patched appearance. You had far better take the bull by the horns and stucco it once for all. To paint the house properly takes three coats of paint, which really will count only as two, as the old neglected and dried surfaces will practically suck up the first coat, it thus merely acting as priming. Painting will cost you about a cent per square foot for each coat of paint every five or six years, the intervening time depending upon the exposure of your house and the quality and expense of paint you employ, and you will have to repaint and restain, as well as reshingle, somewhat less frequently.

If your problem is somewhat different, if you have, for instance, an old wooden house you are thinking of shingling, you will find that shingling it costs about ten cents a square foot, staining the shingles three, or your total thirteen. The stucco, put on in the very best manner, will cost about seventeen cents a square foot, or about one and a half times as much. If you are thinking of building a new country house and are in doubt as to the relative expense of finishing the outside with stucco or shingles, you will find the same proportion holds true. Say you propose building a cottage to cost you not more than six thousand dollars. Its exterior side surfacing may, if shingled, cost four hundred; if stuccoed, six hundred. In ten-years' time you have more than saved the additional two hundred in paint, in carpentry, and in general tightness and appearance. At the very outset it looks better, especially where economy was the main consideration, and your exterior woodwork could not be of the best.

On the other hand, what is the life of stucco and what are its defects? We do not definitely know its life or lasting qualities. We do know that where it was properly and carefully veneered on buildings, some twelve or fifteen years ago, it is stronger and finer-looking to-day than the day it was put on. And this is reasonable, for the older cement or concrete grows, the harder, the more impervious to weather, and the more like a natural rather than an artificial stone surfacing it should become. Where it cracks and crumbles and one which builders will make much of, but which is very obvious reason—the principal one being the use of improper wire or metal lath, lath either of incorrect material or not well bedded in the cement, so that it has rusted, and the stucco naturally fallen away from it. To all intents and purposes, stucco will stand forever if the lath does not rust out.

"How to mix it and how to apply it"—there is the secret, and one which builders will make much of but which is very simple. Stucco is nothing more nor less than cement plastering and a method of preservation which has been in use

The house before the alteration

for generations where the cost of a true stone or concrete wall was prohibitive.

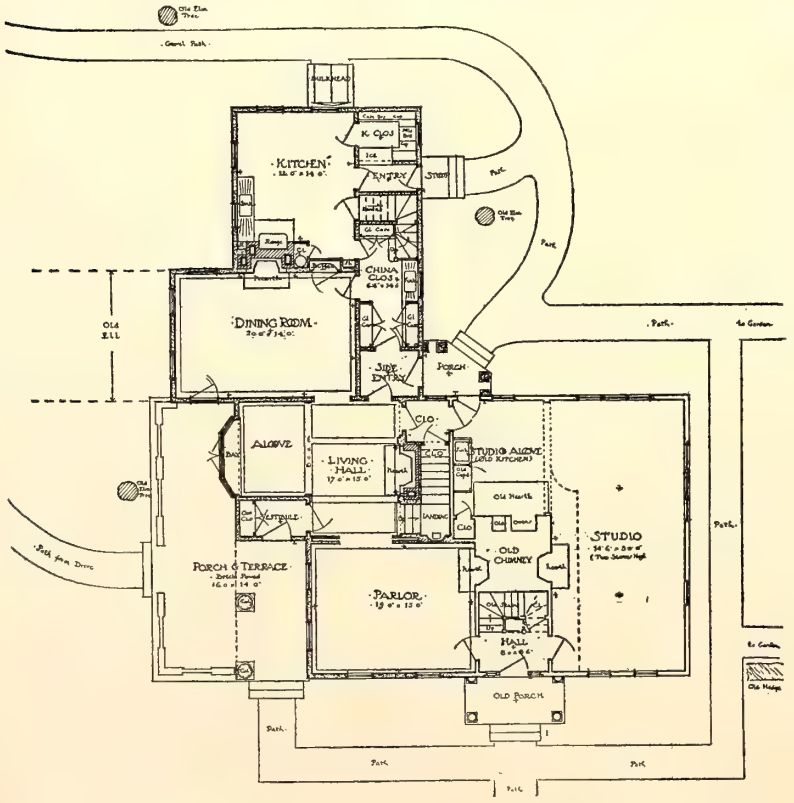
If you have made up your mind before building your little cottage to stucco its exterior walls, do not permit your builder to make the framing braced. On the contrary, you want a balloon frame, with as few and as short horizontal studs as possible. Next, the sheathing had best be nailed horizontally, it takes but little additional trouble and means much in later cracks. Then, whatever you are covering, an old building or a new house, take care that there are around your door and window openings proper members of sufficiently wide projections to receive the total projection of furring, lath and stucco. If there are trims around the outsides of openings, they must project at least two and one-half inches. If you propose carrying your stucco around and inside the openings, back to your frames, and save the expense of the trims, your sill and frames must be heavy enough to take the finishing stucco.

On a new building, cover your diagonally nailed sheathing with two or three thicknesses of roofing-paper. On these, as well as directly on the old siding of the old building, should be nailed wooden furring strips. These should have a beveled section "A," and should be run horizontally. The wooden surface nearest the lath and plaster has purposely been cut as small as possible, giving the least wooden surface for the absorption of water from the stucco and con-

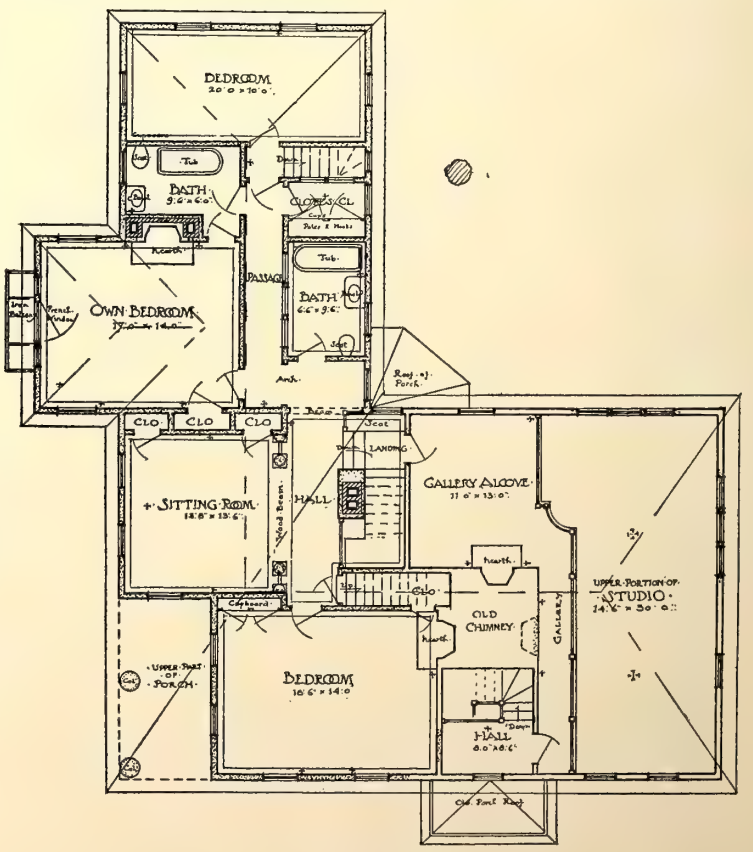
The house after the transformation

The rear of the house showing the studio end of it

sequent shrinkage and cracking. The lath, which is to grip and hold the stucco, is nailed on to the furring strips. Wooden lath should be considered out of the question for exterior work. In the long run, the surfacing will invariably fall off of it. Expanded metal lath, and there is an infinite variety of it, has been used very extensively, but it is not to be recommended. It is advertised as the very best backing for our work—it is advertised specially covered with anti-rust solutions, to easily embed itself in the plaster, to key quickly and have no sharp edges to shear the plaster, as well as by its corrugation to provide against contraction and expansion and avert cracking. Far better than expanded metal lath is a good galvanized wire lath. Naturally it comes in many different grades as well as varying mesh, but relatively valued, it ought to cost about twenty-three cents per yard, as against twenty cents for expanded metal lath of about the same grade. Be certain that the wire is galvanized; No. 20 gauge is good, No. 18 best of all. It must further be rigidly tacked to the furring strips. Builders generally prefer, for convenience and economy of time, to tack the wire mesh on vertically; it should, however, be tacked on horizontally, lapped at the joint at least three inches. If



First floor plan



Second floor plan

the surface of the stucco cracks, it naturally cracks at the joints of the sheets of metal mesh. If these come horizontally, moisture striking the outside of a building and running down the surface is not so liable to get behind the stucco and rot it as it would in the case of a vertical crack.

Stucco itself should be put on in three coats, although merely two are frequently used. The first two coats should be put on, one directly after the other, the second while the first is still wet, so that the two will dry together in one hard body. The scratch coat, which should be applied about half an inch thick, should be pressed to a certain extent through the openings of the wire lath so that this becomes completely embedded and covered. The best mixture for it is five parts Portland cement, twelve parts clean coarse sand and three parts lime and long clean hair. As it is finished it is scratched and roughened by a small, tooth-nailed board on a convenient wooden handle, the trowel or a stick. Then the second coat, about three-fourths inch thick, is applied, mixed one part Portland cement, three parts sand and one part lime-paste. When the two first coats have set well and are thoroughly dry, apply the final coat. The surface below should be splashed and wet by the brush as the finish coat is applied, to give a good grip to the whole mass. The mixture of the finishing coat depends, to a certain extent, upon what color or surface is desired. One part shell-lime to two parts marble-dust laid on either smooth or rough cast gives excellent effects. Instead of the sand, you can get a very fine appearance to your final coat by using finely broken shell. Shell-lime in your finishing coat is likewise excellent.

The dining-room has paneled walls in white and salmon

The finishing coat should be put on about one-half inch thick. How to apply it depends upon what appearance you wish. As a general rule, a rough surfacing is far preferable to a smooth one. The small "hair cracks" which appear here and there after the whole has set, will, with a rough surface, become invisible; added to this, any outside stains made by weather or by a leaking leader do not appear as ugly streaks and blotches, but blend into the general outside roughness and uneven coloring. Color should be used very sparingly—the pink, ocher and green color so frequently met with on the outside walls of the villages of Mediterranean countries may look very well in their picturesque setting and amid

The fireplace and Dutch ovens of the old house are retained in the studio

The gallery extends around three sides of the studio

their neighbors, but when copying their color-schemes here turn out exotic and garnish. A dish-rag gray is as safe a color as can be used. Whether a little lamp-black or other coloring is used, it should be thoroughly incorporated in the mixture of the finish coat. In southern climes the coloring is merely water-color, put on like our kalsomine with a brush, and renewed whenever the outside becomes too shabby.

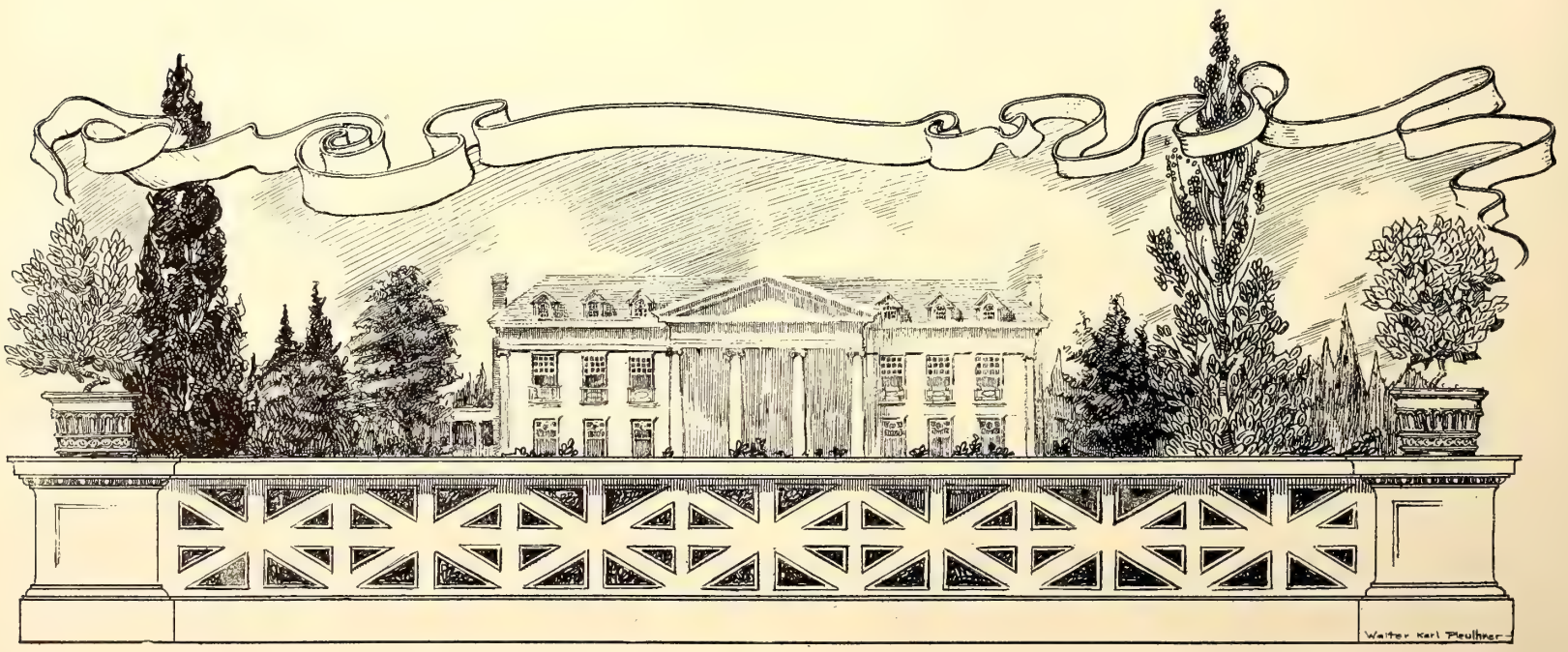
A smooth finish coat is produced outside in similar manner to the finish coat of plaster inside a room, by smoothing with a wooden float. A fine rough surface, also called "spatterdash," is procured by throwing the surfacing on with a trowel or a large, stiff-fibered brush. This takes some degree of skill on the part of the mason. A "pebble-dash" finish with little pebbles in the outside surface should not have its pebbles over a quarter of an inch in diameter. Carefully selecting nice white ones on the beach will give a very beautiful appearance.

Before settling on your color, make a number of samples of different shades and different finishes—they cost nothing, and you will soon see how the smoothness or roughness of the infinite number of little shadows cast by the rough projections of the surface effect the general tone. Remember that the color looks somewhat different in a larger surface from that in a small one, and that the color becomes lighter and lighter as it dries thoroughly, and, again, that the weathering will make it somewhat darker as it grows older.

The dining-room is carried out in the Colonial style

Do not let the finish coat dry too quickly, or it will crack. A gradual setting is always the best. If you are obliged to put it on during the summer season and a blistering hot day is sucking the water too rapidly out of it, hang damp old sails or burlap in front of such portions as are drying. Only lay out an amount that can be covered in the time you have at your disposal, not leaving off in the center of a plain surface unbroken by angles or wooden projections. If you employ a mortar with no lime in it, such as many masons prefer, remember this takes longer to dry than that to which the lime has been added.

The house used to illustrate this article very ably expresses the economic use of stucco as a means in remodeling and transforming an old house. Mr. C. La Verne Butler, having found himself possessed of an old farmhouse at South Framingham, Massachusetts, saw the possibilities it possessed and immediately took up the task of its transformation with the excellent results shown in the photograph herewith presented.



A Farming Experiment by Women

By S. Leonard Bastin

QUITE one of the most noteworthy events of the horticultural year has been the establishment of the novel garden at Thatcham, England, which bids fair to become world-famous. The fruit and vegetable farm is of interest, owing to the fact that it is owned and managed by ladies, and is in itself a striking evidence of what a body of enterprising women can accomplish. This is only a half of the importance of the experiment, for the subject is one which commands the attention of all gardeners, whether amateur or professional. In it we may see the commencement of a system which threatens to revolutionize gardening methods in all civilized countries. Of course, the idea is not new; for years it has been followed by the gardeners of Paris, but it has always been regarded as a makeshift policy rendered necessary by the peculiar conditions under which the Frenchmen pursue their occupations. The market gardens of the gay capital press much more closely to the heart of the metropolis than is the case with most of our cities. As a consequence, land is expensive and difficult to obtain, so that the owner who followed the ordinary methods could not hope to get a sufficient return from his property. Necessity, as is so often the case, has stimulated the inventive genius, and the growers have evolved a system whch has put them in a position that is the admiration of the world.

At the present time it is of value to consider the merits of the French method of gardening. The point of the whole idea consists in the employment of every square inch of land which is available. That they do this to some purpose is best evidenced by the value of the ground—a matter which is, of course, regulated by its productive capabilities. For comparison, two circles were taken, one in London and another of the same size in Paris. When the statistics from the two circumferences were placed side by side, it appeared that the British center was an agricultural desert when compared to the French area. Whereas, in the former, garden land was rented at ten or fifteen dollars an acre, in the latter, ground commanded a rental which, in cases, was as much as two hundred and fifty dollars. This even though the climate and situation are almost identical for all practical purposes. After all, the secret of this astonishing state of affairs is not a very great mystery, or one which can not be easily explained. From the first moment when the French gardener takes his land in hand, the one aim of his existence is to enrich the ground to such an extent that things will simply "grow like magic." Of course, it takes some years to bring the plot up to the highest state of perfection, but in an actual case which came under notice three-quarters of an acre was in a few months yielding as much as three acres would under ordinary treatment! Thus, at the end of a year it it was found that a piece of land one acre in extent, would be yielding produce worth over three thousand dollars a year—a truly marvelous result.

Tending the lettuce under the bell glasses

A consultation with the French gardener

In the French system all the old-fashioned methods of digging, trench-

ing and the like are entirely discarded. At the start, the Parisian gardener only makes it his business to attend to the top soil. This is continually mixed with short stable manure until it has quite changed color and is as black as coal. When the upper soil is in a suitable state it is cleared away, and a layer or two of manure in various stages of decomposition is placed on the ground — this being finally covered in with the enriched mold. Thus, under the fine black mold, you have layers of other soil in different grades, which, when the surface spreading is exhausted, will take its place. Mark, too, the important fact that the layers serve the purpose of a universal hotbed, embracing every foot of the land. After all this work it is no wonder that the land becomes of immense value, so much so that around Paris every gardener will have a clause in his lease providing that he shall be allowed to carry away eighteen inches of soil when his tenancy shall come to an end. Indeed, it is considered to be an excellent dowry for a daughter to grant her the right to the soil from a few rods of land.

Bell glasses are constantly used in French intensive culture

When the land has been changed to the requisite degree of richness, the time for planting has arrived. First of all, however, it is necessary to obtain a supply of the cloches or bell-glasses which form such a characteristic feature of the French gardens. As well, it is usual to have a number of frames, but it is noteworthy that the gardener will make all his own wood appliances. In order to protect the plants in the frames on cold nights, a quality of rye-grass mats are needed, but these are very inexpensive. In all, the outlay is really astonishingly little, when compared with the profits which are derived from the garden. In the laying out of the land every bit of ground is taken into account, even the paths leading between the frames being cut down to the smallest possible width. The usual crops for cultivation under the cloches are lettuces, carrots and the like, five plants being allotted to each glass. In the frames will be placed melons and cucumbers, and other plants requiring more room. As well, at times of the year when such crops would be profitable, radishes and other salads will find a place in the garden, no space being allowed to remain idle for any time. Even between the cloches the patches of ground are made to support the hardier kinds of lettuce or other crops. Hard-headed gardeners have laughed incredulously at the temperatures which the French growers declare that they get in their frames without any heat other than that arising from the beds. The best answer to give to these sceptical folk is, if possible, to get them to see the system for themselves in its workings. It will then be shown that it is perfectly simple to obtain a temperature of eighty degrees or even more in a frame by this method at almost any time of the year.

The success of the newly established garden at Thatcham is the best proof of the fact that the question of climate and soil is a small matter where the French system is employed. The land which has been rented for the carrying out of the experiment is a bare stretch of country in an exposed situation, whilst the quality of the ground is of a most ordinary nature. The enterprising ladies who took up the farm contracted for the right to use several large fields covering in all many acres. By far the greater portion of the estate has either been sublet, or is standing as pasture, simply because it is not wanted. On the acre of land which has been brought under cultivation there has been found a sufficient source of employment for those at work on the farm. At the start it was decided that it would be wise to have the constant advice of a skilled man, and one of the

Bell glasses are applied to the lettuce as soon as it is planted

clever Parisian gardeners was induced to come and take over the control of the farm. Under his guidance the rough patch of land was speedily transformed into a replica of the gardens with which visitors to the French capital are familiar. Owing to the somewhat open situation the plot of ground has been fenced around with galvanized iron palings, but this would not be needful in sheltered places. From the commencement it has been the desire of the principals to copy the system in its entirety, and one of the ladies informed the writer with just pride that everything that could be made had been manufactured on the spot. All the assistants and students are at once initiated into the mysteries of frame-making, glazing and painting—the quality of the work which they turn out showing that girls are not lacking in the abilities to do this special kind of work. Only a few months after the starting of the farm at Thatcham the daily average of lettuces despatched was as high as six hundred in addition to a large amount of other produce. This was in the early part of the year, just when all kinds of salads command the highest price, and the financial outcome of the proceedings was all that could be desired. As showing how intensive is the culture of the land, it may be mentioned that more than a dozen ladies find continuous employment on this piece of ground. Of course, the labor consists in planting, watering and ventilating the crops—the latter a very important item.

Hot beds covered with straw mats

It may be pointed out that the French system which has been described above is of special interest at the present time when the cry of "back to the land" is so much to the fore. Many people, tired of a city life, would find a healthful and remunerative occupation in the "cloche" method of culture. It is from almost every point of view well adapted to the small grower, and the person who shrinks at the responsibilities involved in the farming of a large tract of country. As well, many estate owners would find that to adopt the system on a portion of their ground would much add to the resources of the kitchen garden, a hitherto unexpected supply of out of season fruits and vegetables being rendered possible. In all ways the matter is one which should command the attention of those who are interested in horticulture.

But although the work is comparatively light, do not imagine it to be "easy." No farm or garden work is. But it can often be lightened.

All the work on the English experimental farm is done by girls

Four California Bungalows

By Kate Greenleaf Locke

THE first American bungalow was built in California and grew out of my wish for a house, which, being all on one floor, would simplify the problem of housekeeping.

I remember that my desire reached out for something long and low and spreading; I had an instinctive feeling that the conformation of the landscape and the growth of trees and shrubbery called for a building of this style of architecture, and the little box-like house which twenty years ago represented the home of moderate cost in this beautiful semi-tropical region did not appeal to me.

In a land where the fig, the orange and the olive tree furnished a picturesque and romantic foliage, where broad-leaved tropical plants grew abundantly and without coaxing, and where sunlight and moonlight wove each an individual enchantment unlike any other sunlight or moonlight, I had a conviction that something should be evolved architecturally which would be commensurate in artistic and picturesque suggestion with this setting and environment.

The elongated lines, the low-pitched roof and the broad eaves of the bungalow of India seemed to furnish forth the idea that I needed. It was by virtue of its oddity absolutely removed from all that was commonplace, it held the simple lines which were appropriate to an inexpensive house in a new country, and it permitted a vast deal of variation on the original theme in its construction.

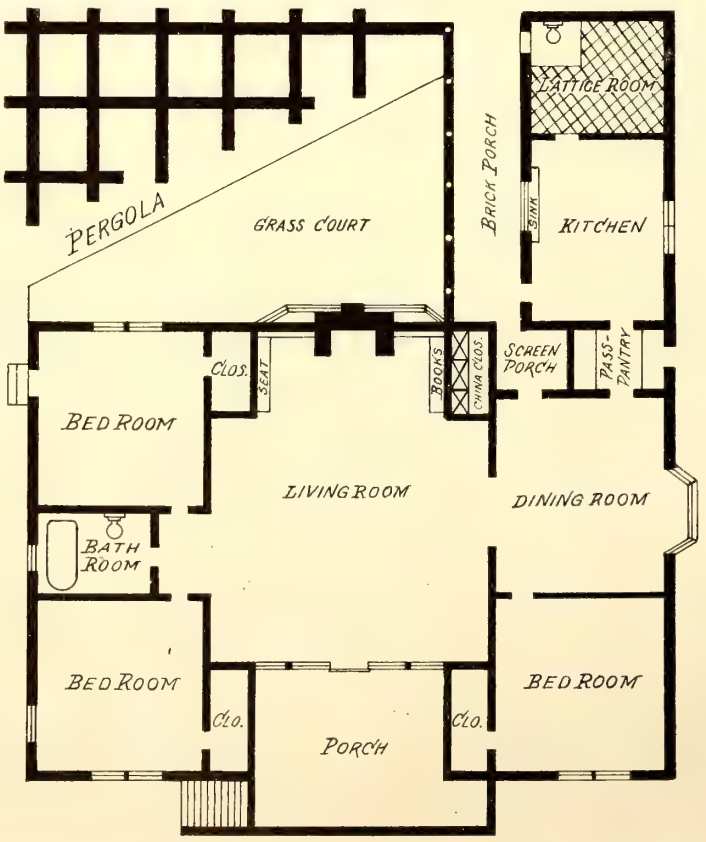
In order to appreciate the superior value, artistically speaking, of the bungalow we have but to contrast the inexpensive houses here pictured with the small house costing from two to four thousand dollars built a score of years ago. Twenty years back, when a man had but two thousand dollars to put into the building of his house, he resigned himself to one without architectural value; he attempted no special beauty of line in its construction and aimed merely to put a roof over his head.

An architect in those days was seldom employed to design a cheap building, and the man himself would have been aghast at the thought of attempting to compete with his wealthy neighbors in the intrinsic beauty of his house.

It had not at that time entered into the calculations of the man of moderate means that he could live beautifully if he chose to do so, and that he could have a house built on artistic lines which would compare favorably with many other houses costing five times as much, or perhaps more.

Bungalow No. 1. The simplest type. Cost, $1200.

In the light of these recent changes it is clear that the man with a small salary, and even the laboring man, may, if it please him, cherish ideas as to the architecture of his house. The introduction of the bungalow-cottage as a feature of modern building has undoubtedly largely influenced this result, for it has spread from California to the Atlantic coast, and many suburban houses throughout the United States, as well as summer homes in the mountains and beside the sea, are assuming this form.



Floor plan of Bungalow No. 1

There are certain features which are inevitable in the house which qualifies as a bungalow, and a certain atmosphere which is as necessary to distinguish it as that with which an artist seeks to pervade his canvas; it can sink easily in its cheaper form into an ordinary cabin or be built, with more money and less artistic instinct, into a commonplace (though, perhaps, expensive) house. Thus, it will be seen that there is a necessity for a realization of just what these features are and in what lies the charm

Dining-room of Bungalow No. 1

which constitutes this atmosphere, if we are to evolve the bungalow in the completeness of its beautiful possibilities from our present architecture.

In attempting to define these characteristics I should say that they are invariably a rustic finish; casement windows which are interesting variations on the French, English (or Georgian) and Dutch types; wide eaves, sometimes heavily beamed; an avoidance of turned-work and a frequent use of lattice-work and flat slats in grilles and railings. And whether the porches are wide and shady, or whether they are terraced and protected merely by awnings, they receive a direct simplicity of treatment which is only saved from crudeness by a high artistic instinct in the handling. The ornamentation is never "stuck on" after the design is complete, as was the fashion a few years ago, when jig-saw work and ginger-bread incrustations disfigured many of the cheaper class of buildings, but the elemental materials of which the structure is composed are so applied in the design as to evoke beauty.

The bungalow owes its distinction from the ordinary cottage to the fact that with all of its ramifications in porches, patios and pergolas it yet retains a certain solidity. It is as if the design were hewn from a single block and it should always have the effect of a harmoniously welded mass in contrast to the style of structure which is light and scattering.

Illustration of bungalow number 1 is an example of the crudest form that this type of house assumes. It is a bungalow pure and simple, retaining in its wide eaves, its squat shape and plain lines the character of the East-Indian bungalow which is its prototype. In it we have an opportunity to enjoy to the full the surprise which gives a charm to these houses, for in viewing the outside the unitiated would naturally conclude that so plain a dwelling would, in its interior, be dull and uninteresting, perhaps, also cramped and stuffy in its effect. When, therefore, one is ushered into a living-room which is 20 x 22 feet in size, which has a floor of dark polished wood laid with Oriental rugs, which glows with soft, rich colors and is filled with a pervading sense of beauty and luxury, the surprise is almost startling.

In this living-room the fireplace is alcoved on a raised platform and much of the unusual attractiveness of the room is due to this feature. The entire alcove is faced in below the row of leaded casement windows—set with amber crinkled glass—with large square tiles of terra-cotta held in place with great, hand-wrought iron nails. The mantel-shelf is painted black to correspond with all of the woodwork throughout the house, and over the chimney-breast between the windows is set a mirror of heavy French plate.

Above the black wood wainscoting of the walls is cartridge paper in warm yellow-tan, and the wood ceiling—tongued and grooved—is finished in new mahogany. There are many pieces of handsome mahogany mingled with wicker and Hong Kong chairs in the room, and the couches and cushions and easy-chairs are covered with East-Indian cotton in brilliant red and greens.

Opening from the living-room with a four-foot arch is the dining-room. The delightful feature of this room is a large bay-window facing the arch and looking towards the east. The walls in here are of rough plaster, sand finish, kalsomined a rich yellow, the four large windows of the alcove are hung with thin yellow silk beneath Japanese grilles of bamboo, and the rug is of Japanese cotton in white and Delft-blue corresponding with the china.

Thus, it will be seen that these two rooms, which are literally thrown together by the wide opening, leave nothing to be desired in the color-scheme.

The bed-chambers in this plain little house have been made as fresh and dainty and exquisite as if they formed part of an expensive establishment. In their design and furnishing is shown the maximum of beauty and comfort with the minimum of expenditure. In a little pink and white room, pale-pink poppies on the ivory-ground of the wall-paper give the color-scheme. The dressing-table—home-made—is of pink satteen covered with white dimity.

Living-room of Bungalow No. 1

The "hour-glass" table beside the bed, which holds a candelabra, is made from two circular pieces of wood and an old broom-handle. The floor is covered with white India-matting and laid with rugs of soft old rose in mohair. The easy-chair of willow is cushioned with striped satin in old rose and the windows are hung with simple scarf draperies of white dimity. The mingling of rich satin brocade with simple cottons and fresh muslins in such a room is a pleasing experiment, and has here produced a charming and very delightful effect.

Bedroom in Bungalow No. 1

The other front bedroom of this bungalow has a commingling of robin's-egg-blue, and green and white in its coloring. The wall-paper is a design of Cherokee roses and green leaves on a blue ground, and the furnishings carry these colors throughout. To all of this the black woodwork gives an effective setting.

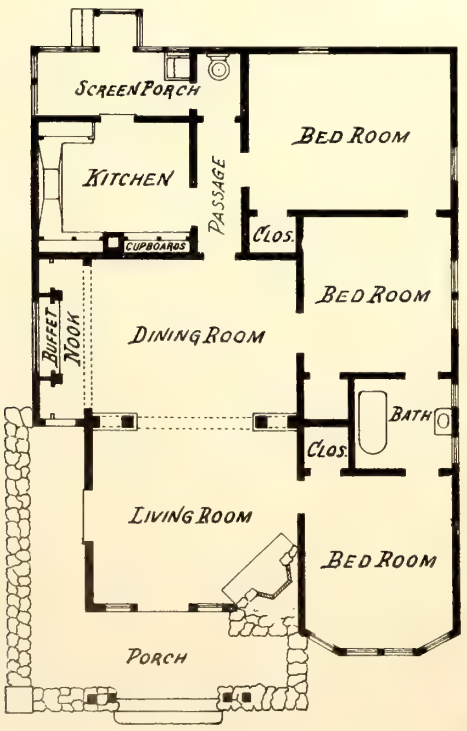
In bungalow No. 2, we have a type of house which depends largely upon a garniture of vines for its possibilities of beauty. The cobble-stones, used roughly, are seen to great advantage when partly covered with creepers. The roofless porch and pergola extension also are built merely as frames on which to hang a green drapery. The plan is so simple as to leave one wondering why we need ever have complicated designs for floor plans; and yet it includes every necessity and convenience of modern living on simple lines. The arrangement of vista in the living-room and dining-room is a particularly happy effect, and to this the French window opening into the pergola from the living-room, and we have all the airiness and space that one could desire—and the cost was was only $2,500.

Bungalow No. 3 is a notable example of the new feeling in architecture for simplicity and picturesque quality, rather than for conventional beauty and impressiveness. Here is a house built on a large scale, costing ten thousand dollars, with a living-room thirty feet long, and other rooms proportionately large; it has two stories and an attic and contains twelve rooms. There is no evidence of a desire to build cheaply; on the contrary, the hand-finish of the wood, the innumerable beams and many unusual windows, the extension porches and balconies, mark it to the practised eye as an expensive structure; and yet it proudly asserts itself a bungalow of the purest type.

It is so skilfully and artistically constructed that, although rising to two stories and a half in height, its lines spread out with a low and gracious aspect; the wide-beamed eaves cover the broad porches in unconventional expansiveness, and everywhere there is a rustic finish. This house carries a suggestion in its design of that most picturesque building in the world, the châlet of Switzerland.

The illustration of bungalow No. 4 shows a house which combines all of the refinements of luxurious living with the simplicity of rustic country life.

Set flat upon a grassy terrace and surrounded by the beautiful live oaks of southern California, it presents the



Floor plan of Bungalow No. 2

Bungalow No. 2. Cobblestones prepared for vines. Cost, $2500

Bungalow No. 3. Suggestive of a Swiss chalet. Cost, $10,000

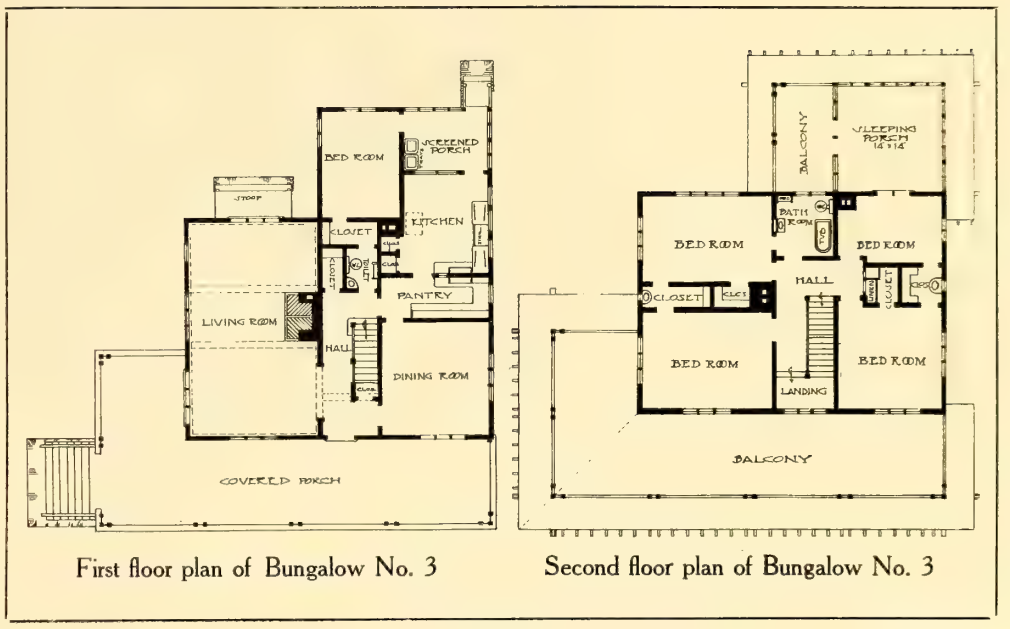
ideal home for that country. Above the brown stain and shingles of the house rise handsome chimneys of pale gray plaster, and wide casements and low French windows open to the terraces and gardens, presenting so complete and finished a picture that it reminds one of a beautiful toy set amid ideally perfect surroundings.

The floor plan shows French doors opening from the porch to the billiard-hall and living-room. A wide French window opens from the living-room on to the terrace pictured in the illustration, and another French window opens from bedroom No. 1 on this terrace. The other windows in these rooms are casement and also open out, giving a charming outlook from the apartments.

The billiard-hall has French windows opening to the terrace on this other side of the house, and there are also two French windows opening from the dining-room to this terrace. As there are four-foot openings on either side of the fireplace between the billiard-hall and living-room and a five-foot opening (with sliding doors) between the dining-room and billiard-hall, these three large rooms can, upon occasion, be virtually made one. The low windows giving directly to the grass and flower-bordered terraces are all opposite one another, so that the effect is most charming; in a summer home it is one which is much to be desired.

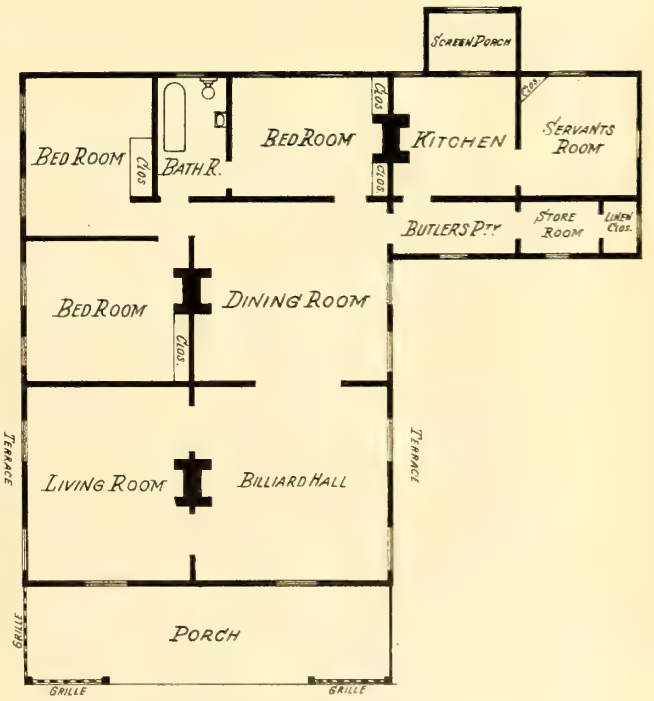
The bath is so arranged that access may be had to it from three bedrooms. The closets in these bedrooms are built in old-fashioned English cupboard-style. The sliding-doors that enclose the cupboard are finished in white enamel to correspond with the other woodwork, and have a long dressing-mirror paneled in each. The cost of this house was six thousand dollars.

I think I have proved my case, have I not? Surely the photographs help, and I hope my description also. But you should see these bungalows amid the native trees and the warm sun of California!



First floor plan of Bungalow No. 3 Second floor plan of Bungalow No. 3

Bungalow No. 4. The ideal California Bungalow. Cost, $6,000



Floor plan of Bungalow No. 4

The American Shetland Pony

By Fritz Morris

THE idea that that short, shaggy, stunted, little quadruped, the boon companion of thousands of our youngsters, must be imported is quite wrong. While the "shelties" came originally from Shetland Islands, a fair sample of the species is bred in this country. One club has made it a special object to encourage the perpetuation and improvement of the Shetland pony, and preserve a record of it, and they are so particular to maintain a high standard that no Shetland pony exceeding forty-six inches in height is registered. The "sheltie" is the most lovable of all animals, and he has a way of inspiring a lasting affection. He is as patient as a donkey, as spirited and active as a terrier, and as sure-footed as a mule, and it is just these characteristics which makes him such a prime favorite with parents for their children's pet.

The sheltie is of all colors—black, brown, dun, chestnut, piebald and cream—though the favorite color is a matter of fashion. Not long ago the blacks were considered the best and the piebald least desirable, although, at one time, the latter were in great demand. Taste altered and went to mouse-color, then changed to blacks, browns and bays.

As a pet, pure and simple, it is considered that the "sheltie" has established himself in most families. Something in the nature of a freak from his babyhood upward, he has the knack of securing and maintaining his master's love and is possessed of the singular power of transposing the positions of master and servant, for the "sheltie," as a rule, holds the whip-hand. He has an abiding fondness for children, and it is a curious fact that boys and girls seem better able to control him than their elders. The pony just now holds a very prominent and unique position. Unique, because he has lately risen from the condition of a children's plaything to a footing of practical adult usefulness; prominent, because the best of his kind carries a value in dollars and cents that is considerable.

The Shetland pony breeders in this country are, just now, very much interested in the various types of the registered Shetland, and in developing and exhibiting them at the different State fairs, and it goes without saying that no up-to-date Horse Show is quite complete without including the distinguished liliputian quadrupeds in a well-extended breeding classification. The harness classes have also added premiums. Some of these finely conformed, and most gimpy, miniature animals are full of style and very trappy gaited, and they never fail to excite instant comment from the Horse Show critics.

Four-in-hand

For a number of years the Illinois Shetland breeders' exhibits have won about all of the money offered at the big State fairs and the city horse shows, and, as a demonstration of this fact, it may be stated that there were four different breeds of Shetland ponies exhibited the past season from some of the Illinois breeds. The Silver Spring farm herd of Logan W. Black was exhibited at the State fairs of Iowa, Minnesota, Michigan, Ohio, Indiana, Illinois, Kentucky, Tennessee, where they won most of the prizes offered for Shetland ponies at each.

The cost of what the average pony eats does not shrink the wallet of the owner to an appreciable extent. It is related of one little fellow who mysteriously disappeared, that after the passing of two or three weeks he was found in an abandoned clay pit, healthy and unconcerned, having rustled his living out of the hole and he was still happy.

An equipage "built to fit"

Registered Shetland mares

"Pine Haven"

The Summer Home of Thomas B. Van Buren, Esq., at Kennebunkport, Maine

By Robert Thompson

THE approach is an introduction to a house, and it is so with the summer home of Mr. Van Buren's. It is very happily situated in a group of pines, from which it gets its name, "Pine Haven," and which implies a panacea to all ills and creates a restful place.

The house has a stone foundation and underpinning. The exterior is covered with shingles, stained a soft brown color, and the trimmings are painted bottle-green. The roof is also covered with shingles and stained a moss-green. The blinds are painted green. The chimneys are built of field-stone. The plan is well arranged with a view to light, air and ventilation. Its entrance is placed at the side of the house and is well balanced by a porte-cochère, thus affording an opportunity for the placing of all the principal rooms on the ocean front of the house.

An interesting summer home

The hall, trimmed with cypress, is stained and finished in a dark Flemish-brown. The staircase is of a simple character and is in keeping with its particular style. It has a newel post formed by a column which rises up and supports an arched beam. The walls have a paneled wainscoting and a beamed ceiling. Underneath the staircase there is a toilet-room. To the left of the entrance is the den, which is finished with forest-green effect and is provided with a paneled seat with cushion upholstered in Turkey-red. The walls are covered with crimson burlap.

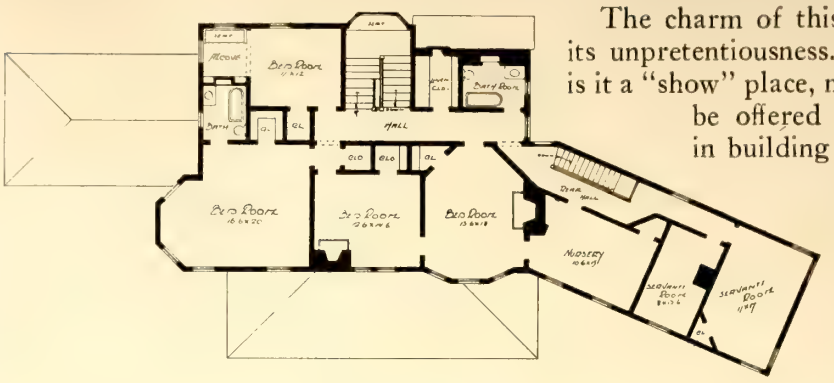
The living-room, treated with white enamel paint, has a paneled waiscoting four feet in height, above which the walls are covered with a tapestry effect, and the whole finished with a wooden cornice. The ceiling is divided into large panels by massive beams. There is a large fireplace, which looks comfortable and inviting, and which is built of huge rock-faced stones picked up from the shore. The hearth is laid with sea-green tile and the mantel and the paneled over-mantel are of the Colonial style.

The alcove at one end of the room, with its paneled seat and bookcases built in, affords a very quiet retreat on a damp summer's day when the east fogs blow in from the ocean.

Off the living-room, and also connecting with the hall, is the dining-room, well lighted and ventilated by having windows placed at either end of the room, affording a cooling breeze to pass through when the weather is warm. It is

The living-room fireplace is built of huge rock-faced stones

trimmed with yellow pine, and is stained and finished in Flemish-brown. It has a high paneled wainscoting and plate-rack. The ceiling has a wooden cornice and beams. The fireplace is built of red pressed brick with the facings and a hearth of the same. The mantel-shelf is supported on corbels, and the overmantel is formed in the paneled wainscoting. To the rear end of the dining-room there is an enclosed porch.



Second floor plan

The butler's pantry is fitted with drawers, dressers and sink, and the kitchen is provided with all the best modern conveniences, including a large store-pantry and a laundry.

The charm of this house is its simplicity and its unpretentiousness. In no sense of the word is it a "show" place, nor can it, on the other hand, be offered as an example of economy in building it. It is, in short, a good, comfortable summer home, a dwelling of ample size, admirably suited to the demands made upon it by the owner and his family, skilfully designed, and exceedingly attractive in many ways. A house, be its cost of the utmost, could hardly do more than this, could scarce be more serviceable nor more useful.

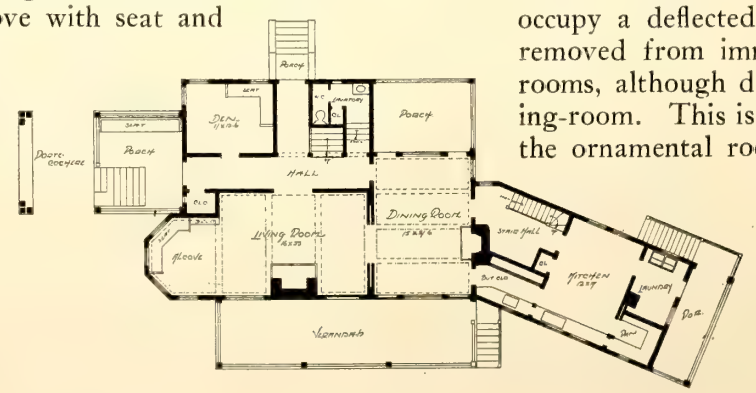
The plan offers some unusual features which are of peculiar interest. The greater part of the building is a large rectangle. The main entrance is at one end, with a porte-cochère, as I have previously explained. A corridor runs through the center of the house, with the living-room and dining-room on one side, and occupies the deeper part of the house. On the other side is the den, with a porch in the farther corner. The kitchen and its dependencies occupy a deflected wing farther on and is quite removed from immediate contact with the main rooms, although directly articulated with the dining-room. This is a very able plan, since it places the ornamental rooms on one side of the house; separates the den, an intimate personal apartment, completely from them, and isolates the kitchen utterly. This last feature is well expressed in the exterior by the deflection of the kitchen wing, that gives a marked nobility to the exterior.

The porte cochere and main front

The rear stairs lead to the second-story and down to the cellar, which contains the heating apparatus and fuel room.

The second story is treated with ivory-white paint, and contains five bedrooms, two bathrooms, large linen-closet and two servants' rooms. Two of the bedrooms have open fireplaces with tiled hearths, facings and mantels; one room has an attractive alcove with seat and bookcases built in, and each have large, well-fitted closets. The bathrooms are furnished with porcelain fixtures and exposed nickelplated plumbing. There are ample guest-rooms and trunk-rooms on the third floor.

Messrs. Clark and Russell, of Boston, Mass., were the architects of this interesting summer home.



First floor plan

CORRESPONDENCE

The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

By Alice M. Kellogg

Author of "Home Furnishing: Practical and Artistic"

ACCESSORIES FOR OLD-FASHIONED FURNITURE

A NEW JERSEY subscriber, D. F. G., has lately awakened to the fact that she possesses some really interesting, valuable old furniture. Her letter tells the story: "I have inherited from time to time certain pieces of mahogany furniture that I have kept in use in my own bedroom, without thinking very much about them. I have been reading so much in the magazines, and have also been studying the illustrations, until I am convinced that my furniture is worth owning and also worth showing to the best advantage. I hesitate, however, about making my sleeping-room a museum of antiques, as it would certainly become if I kept literally to the period in which my furniture belongs—the latter part of the eighteenth century. Now, would you advise my making a strictly Colonial chamber of my room? Or, can I still keep something of the old-time charm without destroying the individuality of my four-poster bed, high-boy, drop-leaf writing-desk, and Heppelwhite card table?"

If a strict return were to be made to the furnishings of the period to which this furniture belongs, it would exclude many of our modern comforts. Historic correctness applied to home furnishing is suggestive, as this correspondent says, of the museum. The distinction which antique furniture of good design lends to a room need not be lost if the accessories are carefully and harmoniously assembled.

In the matter of floor coverings, for example, the hand-woven cotton rug of Colonial times may be adopted, yet chosen from among the artistic dyes that are now in the market. For the bed-hangings one of the daintily colored Scotch cretonnes may contrast with a small-figured wall-paper. The woodwork would be painted white, in the egg-shell finish. The window-curtains may be of white grenadine edged with lace. If the room is occupied in the winter months, some over-curtains to draw in the evening may be added. If there is an open fireplace, the andirons may be of Colonial pattern, with a low fender to outline the hearth. If the wall-paper is not too decorative for showing pictures, the colored engravings from old English paintings would be attractive.

BEDSTEADS FOR SMALL ROOMS

"I notice in the illustrations in the magazines that wooden beds are again being used. We are about to furnish a hall-room and would like to have it up-to-date, but a wooden bed will fill up the contracted space (or seem to do so), and we would like very much to know if there is anything besides the white iron or brass beds that we can adopt?"—R. D. E., of Vermont.

The metal beds have certainly the advantage of giving a feeling of space in a small room. This is most apparent in the new designs in which there are very low, square posts at the head and foot, finished in old brass. In a good quality this bed costs $27.00 in the three-foot size. It is especially liked in boys' rooms.

HOLDERS FOR PLANTS

"A Flower Lover" inquires about suitable holders for plants which she likes to distribute through the house.

Some jardinieres in white porcelain with a little decoration in color that are made in Germany are attractive in bedrooms. A green jar, if not too vivid in tone, is generally acceptable in any part of the home. Hammered brass or copper gives a touch of color that is not too obtrusive to be artistic. Some of the Japanese pots are now covered with brown wickerwork, and these may be had in pairs, on a pulley, like hanging baskets.

WHITE ENAMEL FURNITURE

The choice between maple and white enamel furniture has puzzled a reader in South Carolina, Mrs. T. R. W. "Two of my bedrooms are fitted up with mahogany and I do not wish another with this wood. Would you advise me to adopt white enamel or maple? They both seem very colorless, and I do not know what to combine with either to make an attractive chamber for my young daughter."

Of the two finishes, the white enamel will be more pleasing, if the furniture is of simple, straight lines, without the exaggerated curves that are introduced in the wood by so many manufacturers. If the occupant of the room is fond of blue, this color may be used in a soft antique shade, with other colors showing in rugs and furniture coverings to give the warmth that blue lacks. Or, if pink is the favorite color, this will help to make the white enamel furniture less severe looking. A charming room was lately contrived for a girl who was very fond of heliotrope as a color, but who was wise enough not to demand this for the wall-covering. A paper was chosen in which gray, green, yellow and heliotrope were combined, and each of the colors was repeated in the furnishings—the rug showing two shades of moss-green, a wicker settle being fitted with cushions covered with yellow and green cretonne, and the window curtains were made of heliotrope-colored linen trimmed with bands of the cretonne. The furniture of white enamel was so relieved by this combination of color that it did not at all strike the attention for its colorlessness.

WALL COVERING FOR A HALL

"Is there anything better than burlap for covering the walls of my hall? We have only one stairway and it receives all the passing of the family and servants, besides the trunks and furniture that must be taken from one floor to another from time to time."—O. L., Albany, N. Y.

Burlap has long been in favor, and its use-

(*Continued on page xv*)

Garden Work About the Home

By Charles Downing Lay

A SUBSTITUTE FOR BOX EDGING

"WHAT can we use as a substitute for box edging, which is not reliably hardy here?" asks E. F.

This is a difficult question, because no other plant is so good as box where that is hardy. Any substitute is likely to be an unsatisfactory makeshift, unless it be an evergreen of good color, slow growing, and easy to keep within bounds when it is clipped.

The dwarf syringa, *Philadelphus nanus,* is low and perfectly hardy, but its leaves are out of scale and the whole plant seems coarse in the flower-garden.

Japanese barberry, *Berberis Thunbergii,* is often used, but it grows too rapidly when clipped, and the changes in color and appearance before and after clipping are too great. It cannot be kept much below fifteen to twenty inches in height and about a foot broad, which is too large for most gardens.

The yews are probably the best substitute for box; they are evergreen, good in color and texture, and bear clipping better than any other plant.

The American yew, *Taxus Minor,* is an excellent hardy shrub. It grows naturally in moist shady places, but does just as well in full sunlight in ordinary garden soil. It is easy to clip, and when grown as an edging makes a compact and uniform hedge. It grows more rapidly, perhaps, than box and seems never to be winter killed. Plants six to ten inches high can be planted four or five inches apart, and will soon touch.

The Japanese yew, *Taxus cuspidata,* and its variety *brevifolia,* are also good, though, perhaps, not so hardy as *T. canadensis.*

Their leaves are a trifle larger and seem stiffer than those of the American yew. They grow larger than the American yew and may become good-sized trees. The English yew, which is used so much in England for hedges and for topiary work, is less hardy than the box, and is quite unreliable north of New York.

MORE ABOUT INEXPENSIVE PLANTING

"Please tell me more about inexpensive planting. The answer to a similar question last year was a great help to me. I have collected many wild things from the woods, spice bush, shad bush, viburnums, barberry, cedar trees and junipers, among others, but I have had poor luck in transplanting oaks, hickories and the pepperidge. Can I grow such things from seed? The oaks are full of acorns this year."—H. B. C.

There are many inexpensive ways to get a good stock of shrubs and trees if one is willing to grow them in nursery rows for two or three years.

Seeds of all our native trees and shrubs can be bought, and one can often collect seeds in the woods. They should be gathered as

Cottage Designs

THESE books offer to architects, builders, homeseekers and investors by far the most complete collection of plans ever brought out, while the price is so low as to place them within the reach of all who have an interest in the building of homes. The designs are compiled with a view to representing all grades of cost, from the simplest types of cottages, as illustrated in the first series, to the comparatively elaborate structures reaching to $10,000 or more, in cost, treated in the fourth series, so that examples are given covering nearly every requirement, with respect to cost, in inexpensive homes.

¶ **No. 1. Cottage Designs with Constructive Details**

A series of twenty-five designs of cottages, most of which have been erected, ranging in cost from $600 to $1,500; together with details of interior and exterior finish, all drawn to convenient scale, and accompanied by brief specifications. Illustrated with 53 full-page plates of floor plans, elevations and details.

¶ **No. 2. Low Cost Houses with Constructive Details**

Embracing upward of twenty-five selected designs of cottages originally costing from $1,000 to $3,000, accompanied with elevations, floor plans and details of construction, all drawn to scale, together with brief descriptions and, in many instances, full specifications and detailed estimates of cost. Illustrated by 61 full-page plates of floor plans, elevations and details.

¶ **No. 3. Modern Dwellings with Constructive Details**

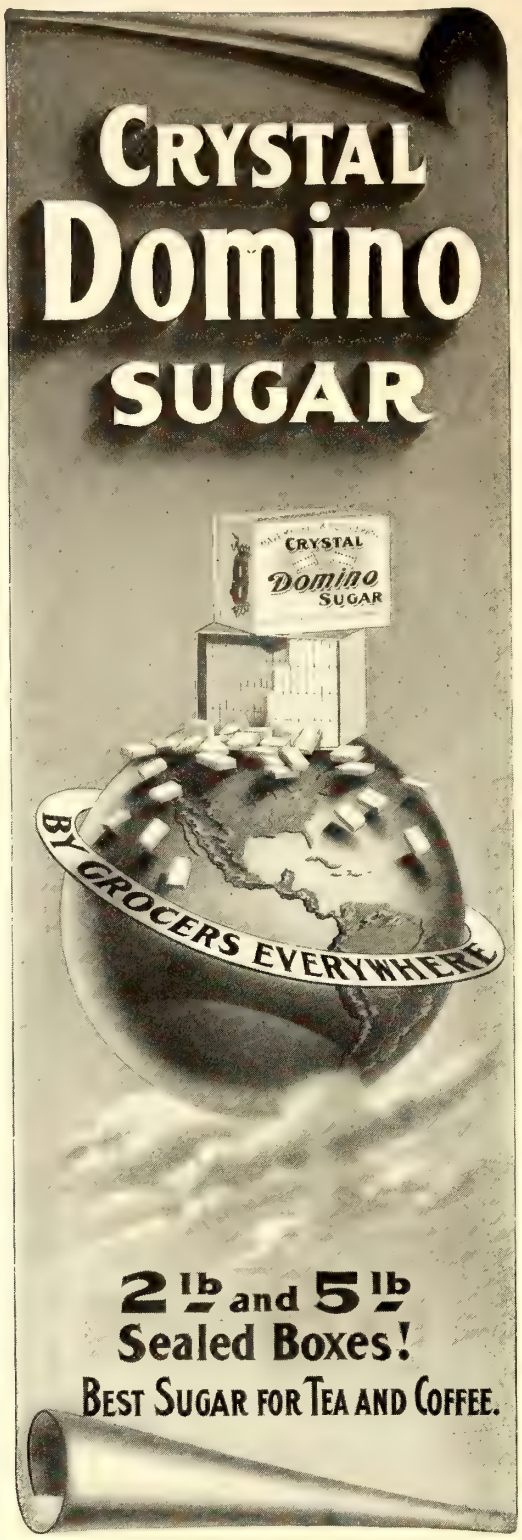
A selection of twenty designs of artistic suburban dwellings erected in various parts of the country, at costs ranging from $2,800 to $7,000; embracing floor plans, elevations and constructive details, showing interior and exterior finish, and drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions, from photographs of the completed structures, and 61 full-page plates, of floor plans, elevations and details.

¶ **No. 4. Suburban Homes with Constructive Details**

Comprising twenty selected designs of attractive suburban homes, ranging in cost from about $3,000 upward; embracing floor plans, elevations and constructive details, showing interior and exterior finish, all drawn to scale, together with extracts from the specifications. Illustrated by means of half-tone reproductions from photographs of the completed structures, and 75 full-page plates of plans, elevations and details.

One Dollar Each, Postpaid
(SOLD SEPARATELY)

MUNN & CO.
INC.
Publishers of Scientific American
361 Broadway, New York



Study
Architecture

EASY LESSONS
OR, STEPPING STONE TO
ARCHITECTURE

By THOMAS MITCHELL

A SIMPLE TEXT-BOOK telling in a series of plain and simple answers to questions all about the various orders as well as the general principles of construction. The book contains 92 pages, printed on heavy cream plate paper and illustrated by 150 engravings, amongst which are illustrations of various historic buildings. The book is 12mo in size, and is attractively bound in cloth.

PRICE FIFTY CENTS, POSTPAID

MUNN & Co., INC., 361 Broadway, New York

soon as ripe and planted at once or put in boxes with layers of moist sand until spring, when they are planted in the seed-bed. Large edible seeds are better treated in this way, because they can then be protected from squirrels and mice, which may find seeds planted in the ground.

It would not be a bad idea to plant hickories and oaks in pots until they are big enough to set out in their permanent positions, because their long tap root makes them hard to transplant.

Some seeds, those of the thorn, for example, should be freed of the pulp and washed, and even then they do not germinate until the second year after planting.

Grapes are easily grown from cuttings, which should be made now and buried until spring, as described last month for scions, when they can be planted out in rows. Each cutting should have two buds or eyes, and should be of wood which ripened a year ago.

Cuttings of privet, currant, buckthorn, willow, poplar, etc., can be made in the same way.

Layering is the easiest way of all to propagate plants. A layer is a branch which has rested on the ground and has taken root at the point of contact.

Honeysuckle will layer without being urged, Rosa Wichuraiana without difficulty, if the branch be covered with a little earth, but for most things it is better to make a small cut on the under side of the branch where it will touch the ground, and then peg it down and cover the cut place with three or four inches of earth. After six months or a year the branch should be well rooted and can be removed from the parent plant.

Layering is easily done with roses, forsythias, vines, and, in fact, most shrubs.

Some shrubs, like the cornel, increase by underground suckers or stolons; these can be dug up and will soon make good plants. Spireas, Indian currant, lilacs, sassafras, black alder, clethra, and many others can be increased rapidly in this way.

All native plants can be bought of collectors, if one lacks opportunities to collect them for one's self. A list of responsible collectors will be sent to those who would like it. A small spade and a large basket or piece of burlap should be invariably carried on any drive in the woods. Then one is ready to dig up anything.

THE CHINQUAPIN

The chinquapin, or dwarf chestnut (*Castanea pumila*), is, as R. P. says, a charming plant. It grows sometimes forty-five feet high, but bears delicious, small, sweet nuts when three or four years old. It is more like a shrub than a tree, and when planted thickly forms miniature shady groves. It should be grown for the sake of its nuts wherever there is too little room for the chestnut tree.

PLANTING THE FLOWER GARDEN

Arranging the plants in a flower-garden always takes much thought; more when the garden is small and there are a great many plants to grow. There is always a conflict between one's desire to have it always full of flowers and one's inability to give up such things as peonies and iris. It is, of course, impossible to have any garden a mass of flowers throughout the summer. The peonies and iris last but a short time, and when they are past, that part of the garden is without flowers for the rest of the season.

With annuals there is the same trouble. They do not bloom until late June or July, and how can the place where asters are growing, for instance, be made to produce flowers before the asters?

The only way out of the difficulty seems to be to have the annuals in separate small beds,

or for the lack of that convenient arrangement, to plant them in small patches in the perennial border. In either case they may be preceded by tulips or hyacinths, or may be grown with English or Spanish iris.

Thus, a bed of early tulips can be planted after the tulips have flowered, with marigolds; a bed of late tulips may be planted with asters, or the tulip-bed may be sown in the autumn with the seeds of annual poppies, which will bloom soon after the tulips. When the poppies are past, it will not be too late to transplant almost any of the annuals.

Such small beds imply a formal arrangement, which is not always desirable or possible.

If the garden is all large beds, the difficulty must be met in another way. Thus, a half dozen peonies might form a crescent about a small patch of centaurea. The larkspur might partly surround a square yard or so of pot marigold, and with the larkspur you can plant the white madonna lilies.

Baby's breath, *Gypsophila,* will be a good foil for the brilliant colors of verbena or zinnia, and planted back of the hollyhocks there might be rudbeckia or helianthus, just as marshmallow might be behind the peonies.

Iris can be in large clumps, mixed with the perennials or with hemerocallis, or with some of the lower annuals.

Chrysanthemums and Japanese anemone, which are very late, could share their bed with Oriental poppies.

Lilies and other bulbous plants can be mixed through the perennials almost anywhere, so long as they are planted with lower things.

A garden arranged in this way should never be without flowers from earliest spring to late autumn, and it should always look reasonably full of flowers. It requires much more intelligence on the part of the gardener, however, because everything has got to be done at exactly the proper time and it will not do to forget where the bulbs are planted. Although the cultivation of a garden so crowded with plants, some of which are never seen above ground except when in flower, may seem more difficult, it should not be so, because there is actually little room for weeds to grow.

I trust this will answer E. B.'s rather indefinite question. Any more detailed questions I should be glad to answer more in particular.

Problems in Home Furnishing

(*Continued from page xiii*)

fulness will probably never be discontinued. It comes in a variety of shades and in several grades and prices. Another wall fabric that is adapted for this correspondent's need, but of which she may not have heard, is called crash, or buckram. In fact, there are two materials almost exactly alike. These are considered unfadeable in the sun, and they have a texture effect, while they are smooth enough not to attract particles of dust. The warm, light-brown tones are excellent for a hall, either with natural or weathered oak woodwork.

PILLOWS FOR A DIVAN

The number, size and material and colors of sofa-pillows have been asked for by a reader in Western New York.

As the "cozy corner" idea has lost favor, there has been a more restrained use of pillows for a lounge or divan. In an ordinary living-room the usual allowance now is three, while in a parlor or reception-room none are used. Again, in a den or boudoir, one may enjoy a heap of down-filled pillows. The location must decide the correct number of pillows. As to the colors, it is always in good taste to have two pillows match the covering of the divan, with a third showing a contrast in color and design. A pillow twenty-two inches square is a comfortable size, but with a wide divan twenty-four or twenty-six may be adopted. Cords and tassels, or any decorative finish to the seams is not in vogue now, but the seam is turned a quarter of an inch and stitched on the outside.

BUILDING Construction AND Superintendence

By F. E. KIDDER, C.E., Ph.D.
Author of "The Architects' & Builders' Pocketbook"

Revised and Enlarged by
THOMAS NOLAN, M.S., A.M.

In Three Volumes, 7¼ x 9¾ inches. Sold Separately

Part I. Masons' Work

Ninth Edition, Revised. 965 Pages, 628 Illustrations. Price, $6.00, Postpaid.

Part II. Carpenters' Work

Seventh Edition. 544 Pages, 525 Illustrations. Price, $4.00, Postpaid.

Part III., Section I. Trussed Roofs and Roof Trusses

Second Edition. 299 Pages, 307 Illustrations. Price, $3.00, Postpaid.

MUNN & COMPANY, Inc.
361 BROADWAY NEW YORK

JUST PUBLISHED

AMERICAN RENAISSANCE

A Review of Domestic Architecture
By Joy Wheeler Dow, Architect

ILLUSTRATED *by* NINETY-SIX HALF-TONE PLATES

EASTOVER (Miniature). THE GARDEN FRONT
From "American Renaissance"

This book is a carefully prepared history of American Domestic Architecture from Colonial days, illustrated in the most elaborate manner and worthy a place in every architectural library, and should be read by every one who desires to familiarize himself with Colonial architecture and its effect on the architecture of to-day.

CONTENTS.—Chapter I., Ethics; II., Art and Commercialism; III., The Ancient Regime—Andrew Jackson; IV., Humble Beginnings of a National School; V., The Grand Epoch; VI., Early Nineteenth Century Work; VII., The Transitional Period; VIII., Reign of Terror—Its Negative Value; IX., Fashion in Architecture; X., Adaptation; XI., Concerning Style; XII., Conclusion.

HANDSOMELY BOUND IN CLOTH, GILT TOP
Price, $4.00 net

MUNN & CO., INC., NEW YORK

Garden Notes

PLANTS IN THE HOUSE

THERE is nothing hardier indoors than the rubber plant! It will endure darkness, gas-tainted air, an atmosphere so dry that the furniture cracks, and dust, and still put forth leaves that might as well be cast-iron, they are so stiff and unlovely. But where the conditions can be made a little better than the requirements for a rubber plant, there are other things which will give more pleasure, though they may need a little more care.

A dry atmosphere is the hardest thing for plants to stand, and in a steam-heated house little can be done to ameliorate that. A furnace is better, though still difficult. Heavy window-curtains, shutting out the light from rooms, is another thing against the successful growth of plants in the house.

The following plants, which we may call house-plants, to distinguish them from window-plants which must have direct sunlight, will exist, and perhaps do a little more, away from a window. They are not flowering plants, but are valued only because of their foliage.

Aucuba Japonica is a shrub resembling the rhododendron, but with lighter green shining leaves thickly spotted with yellow. It is often seen three to four feet high, and is the best broad-leaved evergreen for indoor use.

Cycas revoluta, sago palm, is well-known and useful in the house, but needs a greenhouse to keep it always in good condition.

The Norfolk Island pine (*Araucaria excelsa*) looks somewhat like a spruce tree, but is even stiffer and more regular in its branching. Growing it in the house presents no special difficulties.

Asparagus plumosus nanus is the best plant for the dining-table jardiniere.

The umbrella plant (*Cyperus alternifolius*) is easy to grow and very effective. It needs a little more light than some things.

Aspidistra is one of the easiest decorative plants to grow and, in many respects, the most attractive. There are two varieties, one, with green leaves and the other, with variegated leaves.

Dracenas are usually stove plants, but D. fragrans and D. indivisa do well in the house. The former has broad leathery leaves, the latter, thin grass-like leaves.

Ferns in considerable variety may be used.

Sheep Manure

Kiln dried and pulverized. No weeds or bad odors. Helps nature hustle. For garden, lawn, trees, shrubs, fruits and house plants.

$4.00 LARGE BARREL, Cash with Order. Delivered to your Freight Station.

Apply now.

The Pulverized Manure Co., 21 Union Stock Yards, Chicago.

The Comfort of the Telephone

The Bell System has become the *nervous system* of the business and social world.

The comfort it affords the women in the homes of America cannot be measured.

Do you measure it in considering the value of your Bell telephone?

The mother of children can find out where they are at any particular hour of the day—*and how they are*—even though their visits carry them to the country village or the city hundreds of miles away.

The husband on a trip talks from his hotel room to his wife at home.

There is a world of comfort in the *knowledge that you can talk together* at a moment's notice, wherever you may be.

The Bell telephone has a special value because it is everywhere—because at sight you feel a familiar acquaintance with a Bell instrument or a Bell sign.

There are over 4,000,000 Bell stations. You cannot use them all, but from time to time you have a real vital need for one. Which one you cannot foretell.

There are six billion calls over the telephones of the Bell System every year.

Many of these are comforting calls from afar, calls whose actual money value can no more be reckoned than the value of the happiness which one man has and another man cannot buy.

The *very existence* of the Bell telephone service has its value to you, even at moments when you are not using it.

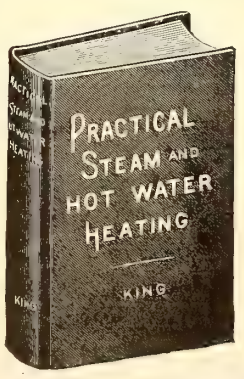
The Bell Long Distance service offers, ready recruited for your call, the largest body of active business men in the world. If you have a telephone, avail yourself of its long distance possibilities.

The highest type of public service can be achieved *only by one policy, one system, universal service.*

The American Telephone and Telegraph Company
And Associated Companies

Every Bell Telephone Is the Center of the System

JUST PUBLISHED **Practical Steam and Hot Water Heating and Ventilation** JUST PUBLISHED



By ALFRED G. KING

402 Pages. Containing 304 Illustrations

Price $3.00

An original and exhaustive treatise, prepared for the use of all engaged in the business of Steam, Hot Water Heating and Ventilation

THE standard and latest book published. Tells how to get heating contracts, how to install heating and ventilating apparatus. Describes all of the principal systems of steam, hot water, vacuum, vapor and vacuum-vapor heating, together with the new accellerated systems of hot water circulation, including chapters on up-to-date methods of ventilation; fan or blower system of heating and ventilation; rules and data for estimating radiation and cost, and such other tables and information as make it an indispensable work for heating contractors, journeymen steam fitters, steam fitters' apprentices, architects and builders.

This work represents the best practice of the present day and is exhaustive in text, diagrams and illustrations.

CONTAINING CHAPTERS ON I. Introduction. II. Heat. III. Evolution of Artificial Heating Apparatus. IV. Boiler Surface and Settings. V. The Chimney Flue. VI. Pipe and Fittings. VII. Valves, Various Kinds. VIII. Forms of Radiating Surfaces. IX. Locating of Radiating Surfaces. X. Estimating Radiation. XI. Steam-Heating Apparatus. XII. Exhaust-Steam Heating. XIII. Hot-Water Heating. XIV. Pressure Systems of Hot-Water Work. XV. Hot-Water Appliances. XVI. Greenhouse Heating. XVII. Vacuum Vapor and Vacuum Exhaust Heating. XVIII. Miscellaneous Heating. XIX. Radiator and Pipe Connections. XX. Ventilation. XXI. Mechanical Ventilation and Hot-Blast Heating. XXII. Steam Appliances XXIII. District Heating. XXIV. Pipe and Boiler Covering. XXV. Temperature Regulation and Heat Control. XXVI. Business Methods. XXVII. Miscellaneous. XXVIII. Rules, Tables and Useful Information.

Valuable Data and Tables Used for Estimating, Installing and Testing of Steam and Hot-Water and Ventilating Apparatus are Given

MUNN & COMPANY, INC. **361 BROADWAY, NEW YORK CITY**

It is possible to collect some of them in the woods and have them do well in the house.

Adiantum croweanum is the best maidenhair fern. The others can not stand the dry atmosphere.

The Boston fern (*Nephrolepis exaltata Bostonensis*) is the most reliable fern in the house. Its varieties, *N. Scotti,* dwarf, *N. Sholz;* and *N. Whitmani,* plumed, are possibly improvements on the type.

Pteris Wilsoni, crested fern, *P. Victoriae,* silver variegated and *Crytomium Falcatum,* holly fern, are excellent varieties.

Pandanus Veitchi, the screw pine, is a plant with green-and-yellow-striped leaves.

Almost any palm can be grown in the house with little trouble, and they are the most beautiful of all so-called decorative plants. Some are too large for the ordinary house, but the following are reasonable in size and satisfactory. *Cocos Weddeliana* is a small delicate affair of slow growth and, therefore, often used in fern-dishes.

Kentia Belmoreana is dwarf, spreading in habit, and quite hardy in the house.

Phoenix Roebelenii, said to be as hardy as a Kentia and resembles *Cocos Weddeliana.*

The most charming plant of all to grow in the house is a lemon, orange or grapefruit tree. They need a sunny window, and an old plant will take up much room, but their picturesque habit, good foliage and fragrant blossoms make them quite worth while. They are more likely to do well in a country house than in the city, because gas seems to be fatal to them. They can be grown from seed, but it is a slow proceeding and the fruit will be worthless, so it is much better to buy a grafted plant which will bear fruit that is of some value.

POTTING SOIL

The best soil for all plants, whether grown indoors or out, is what florists call a good potting-soil. The proportions are sometimes varied slightly, but in general it consists of equal parts of well-rotted leaves and rotted sods with the addition of old manure and a little sharp sand. Rotted sods with old manure and sand (if it is lacking) is the easiest soil to get in most places and it is good enough for any plant. Some plants need special care, but almost none of them need special soil. Moisture, light and air are far more important factors in plant growth than soil.

WATERING PLANTS IN THE HOUSE

Watering potted plants is not a difficult thing, yet improper watering is the cause of many failures. It takes only a small intelligence to determine by touch whether the earth in a pot is dry or moist, and if it be dry to water it until it is moist. If the earth is moist, of course, there is no need of watering. Watering too often is only harmful when the drainage from the pot is not good, or when the pot stands in a saucer full of water. Pots which are put in a jardiniere or bowl should be lifted whenever they are watered to see that there is no water standing in the bowl. Nothing except complete dryness is worse for an ordinary house-plant than to have the earth about it constantly saturated. It should be moist but not wet.

PREPARING THE VEGETABLE GARDEN FOR NEXT YEAR

In October or November the vegetable garden should be gotten ready for the next season. Rake up and burn all the old vines, cornstalks and weeds, spread on as much manure as you can afford, and spade it over thoroughly. Next spring you will be ready to plant as soon as the ground is fit to work and much valuable time will be saved. I believe this is the best practise quite aside from the saving in time.

A Gray November Day

A Silent Servant

A customer writes: *"The Hot-Air Pump you furnished us some eight years ago works as noiselessly, as effectively, and as satisfactorily to-day, as the day it was put in. During this period it has drawn water from a well some thirty feet distant and thrown it through five hundred feet of one and one-half inch pipe to the reservoir."*

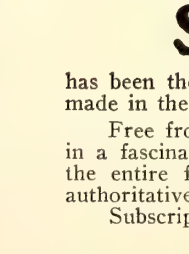
In using the word *"noiselessly,"* our friend has touched upon one of the most important features of a **Hot-Air Pump.**

Many of our customers are people with country homes who have had their nerves sorely tried by the noisy clanging of a windmill's wheel (the source of their private water supply), until, in a spirit of desperation, they have felt compelled to remove the windmill and make trial of a

Hot-Air Pump

With its silent action, health and rest have come back again along with natural quiet and repose. In this way the **Hot-Air Pump** has proved itself a wonderful therapeutic agent, besides being the most reliable domestic water supply known.

Remember that these pumps are not steam-engines, but machines of low-power which cannot explode, operated solely by hot air, automatic in their action, requiring no skilled attention, so simple that any servant or farmer's boy can start and stop the little flame that gives them life. The cost of operation is almost nil, while the delivery of water is absolutely certain at all times and seasons.



Hot-Air Pump

Be sure that the name "REECO"-RIDER or "REECO"-ERICSSON appears upon the pump you purchase. This name protects you against worthless imitations. When so situated that you cannot personally inspect the pump before ordering, write to our nearest office (see list below) for the name of a reputable dealer in your locality who will sell you only the genuine pump. Over 40,000 are in use throughout the world to-day.

Write for Catalogue E, and ask for reduced price-list.

RIDER-ERICSSON ENGINE CO.

35 Warren Street - - - New York
239 Franklin Street - - - Boston
40 Dearborn Street - - - Chicago
40 North 7th Street - - - Philadelphia
234 West Craig Street - - - Montreal, P. Q.
22 Pitt Street - - - Sydney, N. S. W.

(*Also builders of the new* **"Reeco" Electric** *Pump.*)

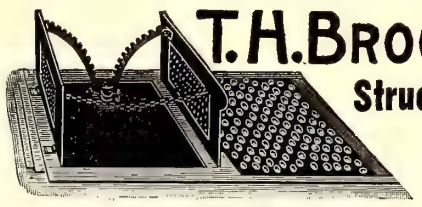
ARE YOU GOING TO BUILD?

The specification of Woodward-Eubanks Mantels by the Architect means satisfaction to the cultured home-builder

Natural beauty of materials and harmonious elegance of design form a combination of constructive elegance unsurpassed.

Our 75-page catalog, which will be sent free (enclose ten cents to cover postage), also gives an illustrated list of Gas and Electric Fixtures the most unique line on the market. We are manufacturers of Tiles, Grates, etc.

WOODWARD-EUBANKS MANTEL CO., Dept. D, Atlanta, Ga.



T. H. BROOKS & CO. CLEVELAND, O.
Structural & Ornamental Steel Work
FLOOR & SIDEWALK LIGHTS.
SEND FOR CATALOGUES.

Dixon's Silica Graphite Paint Lasts

And the reason why it lasts is because its pigments are inert. What have inert pigments to do with it? Our Booklet 106B will tell you.

JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.

Accurate information regarding THE WORLD'S INDUSTRIAL PROGRESS is a necessity of MODERN BUSINESS LIFE, as well as a subject of ABSORBING INTEREST for every thinking man and woman.

For nearly sixty-five years the

Scientific American

has been the most widely quoted authority on all matters relating to the progress made in the fields of discovery, invention and scientific news.

Free from dry technicalities, it tells the story of the WORLD'S PROGRESS in a fascinating and practical manner, which makes its weekly visits welcome to the entire family. It is unique among periodical literature because it contains authoritative information which cannot be obtained from any other source.

Subscription price, $3.00 per year.

The Season's Best Club Combinations

Scientific American or American Homes and Gardens	$3.00	$4.45
Review of Reviews	3.00	
	$6.00	
Scientific American or American Homes and Gardens	$3.00	$6.80
Review of Reviews	3.00	
World's Work	3.00	
Everybody's Magazine	1.50	
	$10.50	
Scientific American or American Homes and Gardens	$3.00	$5.35
Everybody's Magazine	1.50	
World's Work	3.00	
	$7.50	
Scientific American or American Homes and Gardens	$3.00	$5.35
McClure's Magazine	1.50	
Review of Reviews	3.00	
	$7.50	
Scientific American or American Homes and Gardens	$3.00	$5.10
World's Work	3.00	
Delineator	1.00	
	$7.00	
Scientific American or American Homes and Gardens	$3.00	$4.60
McClure's Magazine	1.50	
Woman's Home Companion	1.25	
	$5.75	

After February 1st, 1909, 25c. must be added to combinations including Woman's Home Companion.

MUNN & CO., Inc., 361 Broadway, New York City

Ground bone should be spread on top and worked in with a rake or wheel-hoe, and if the whole garden could be covered for the winter with strawy manure or leaves it would be the best possible preparation for the next season.

TOOLS

The forehanded gardener will clean, sharpen and oil all tools, repairing those that can be repaired and discarding those that are worn out, making a list of spring replacements. The lawn-mower should be put in order now; but are there many people who do not leave it until the last minute in the spring?

SCIONS

If you intend to do any grafting next spring, cut the scions now, selecting wood not of this season's growth, but a year old. They should be cut in lengths of 6 to 8 inches, tied in bundles, and buried in some well-drained spot below the frost-line. Next spring they will be ready when wanted and much better than newly cut ones, because they have been well protected through the winter.

HOUSES THAT DO NOT SHAKE DOWN

IT IS a mooted question whether it is better to anchor the building solidly to the ground by deep foundations, or to place it upon the ground like an independent load free to move in every direction without having its proper vibrations hampered by the discordant vibrations of the ground. In the independent method the lower parts, not being suddenly brought back when the ground returns to its former position, it might be expected that the building would be less easily dislocated, as inertia acts equally on all its elements. But all the advantages of this system can be secured only if the whole building is light and homogeneous. In any case, a masonry building should rest upon an indeformable base, such as a grating of iron bars or a bed of armored concrete. To make the independence more complete, it has been proposed to support buildings upon steel balls or round stones, but this device is of uncertain efficacy. The endeavor is usually to connect the building and ground by solid and deep foundations. Such, at least, is the opinion of M. G. Espitallier, who has contributed a valuable paper on the subject to the Mémoires et Travaux de la Sociétés des Ingenieurs Civils de France. It has been inferred, from the comparative immunity of mine galleries and other subterranean voids, that the vibrations travel more regularly underground than on the surface, and that advantage can be taken of this regularity in laying foun-

Before You Decide
ABOUT HEATING
Your Residence

Let us show you why Richardson & Boynton Fresh, Warm Air Furnaces and Steam or Hot Water Boilers are installed in more buildings than any other make in this country.

If you are building your own home, Richardson & Boynton Heating Apparatus will mean the greatest possible amount of heat at small running expense. It will add materially to the value of your house if you are building to rent or to sell.

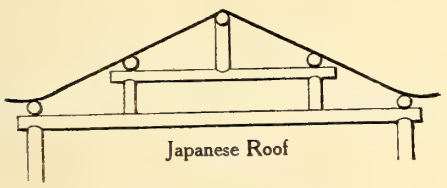
Write for our latest book "Truth About Heating" —we send it free.

Richardson & Boynton Co.
Established 1837
OFFICES
232-234-236 Water Street, New York
20 E. Lake St., Chicago 51 Portland St., Boston
ON SALE BY ALL RELIABLE DEALERS

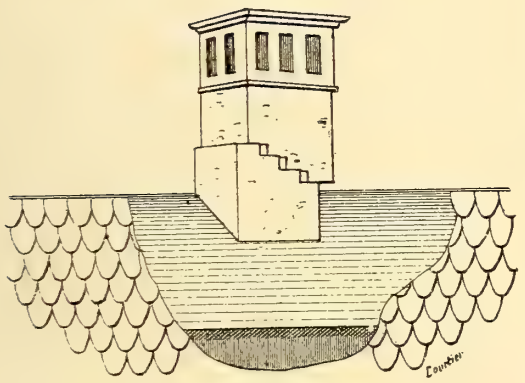
dations; but to secure this result the foundation walls must be separated from the surface soil by very soft filling. In alluvial districts buildings resting upon deeply driven piles have behaved well, but this method is advisable only as a last resort. It would be preferable to employ shafts filled with concrete, close together and connected at the top by elastic girders of steel or armored concrete.

VERTICAL WALLS

The houses of a block should be fastened together for mutual support, and isolated buildings should be constructed on a simple and regular plan. Extensions should be avoided on account of their discordance with the main building. These precautions are useless unless the masonry itself is strong. In spite of their solid appearance, stone blocks form one of the worst systems for earthquake countries, although their tendency to slide could be diminished by using notched blocks. Small elements are preferable if well interlocked and connected



Japanese Roof



The Japanese Method

by strong mortar. Ancient Roman buildings represent the type of this class, and have resisted wonderfully, while modern buildings in the same region have fallen. Bricks form the most homogeneous and isochronous masonry. The cracks formed are seldom vertical, but are usually inclined zigzag lines following the joints, and do not necessarily cause falling. Long horizontal fissures, however, may cause the fall of large sections. For this reason notched bricks are employed in Japan. In the same country a parabolic profile, similar to that of reservoirs and lighthouses, is sometimes employed. The materials of the wall should be as light as possible, especially at the top. All observers denounce heavy parapets, projecting cornices, balustrades, and affixed ornaments, which are easily detached and fall on the heads of fugitives. Balconies are especially dangerous, and should be prohibited entirely.

The solidarity of the buildings should extend to the floors and roof. But as this result is difficult to obtain, some builders have suggested a system of independent floors and roofs. For floors in particular there is no perfect system of connection with the walls. The fastenings sometimes employed only produce fissures in the wall between them and tear out when the walls separate, allowing the floors to fall. The principal floor beams should be long enough to rest on the walls at their greatest separation. The roof, in addition to the danger of falling between the walls, may carry the walls down with it. Independence of the roof has been sought by supporting it upon balls or rollers, but it may be feared that in an earthquake a roof would abuse its independence by slipping off altogethr . At all events, the

TRADE MARK
Tapestry Brick
REGISTERED IN U.S. PATENT OFFICE

The Most Artistic and Permanent Building Material in the World

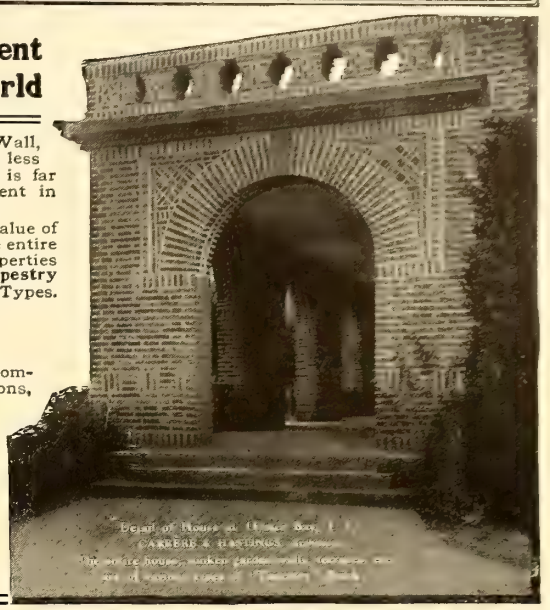
¶ For Castle or Cottage, for House, Stable or Garden Wall, it costs very little more than wood and usually less than concrete (depending somewhat on location), and is far superior and preferable to either. Altogether different in coloring, texture and hardness from ordinary face brick.

¶ For every extra dollar it adds ten dollars to the value of the building and vastly increases the salability of the entire property. Home builders or promoters of suburban properties are especially urged to investigate the many merits of **Tapestry Brick**, with its revival of the old Roman and Persian Types.

There Is Only One "Tapestry" Brick—the name is stamped on each brick

¶ Our valuable book "Tapestry Brickwork," giving comparative costs of wood, concrete and brick constructions, 48 pages, 8 in colors, describing the brick architecture of all ages, full of interest to architect and home builder, sent on receipt of 20 cents (less than the cost to publish). Write for information, describing the work you have in mind.

FISKE & CO., INC., SOLE MANUFACTURERS OF TAPESTRY BRICK
1708 Flatiron Building, New York
We will also direct you to the nearest building made of Tapestry Brick, for your examination.



SANITAS
THE WASHABLE WALL COVERING

To have the cleanest, brightest, most labor-saving of all kitchens and pantries, get *Sanitas*—the washable covering—for the walls. Glazed like tile in plain or decorative tile designs, printed in oil colors on strong muslin. Fade-proof, stain-proof, crack-and-tear-proof. Decorators, paper-hangers and department stores.

SANITAS STANDARD OTC COMPANY CLOTH WALL COVERING

Then get **Meritas**—the **guaranteed** oil-cloth, for the tables and shelves. Beautiful marble and decorative patterns and fancy borders. Trade-mark on back guarantees every yard. Department, house furnishing and general stores.

MERITAS STANDARD OTC COMPANY OIL CLOTH

These materials TRANSFORM *your kitchen and pantry at modest cost.* Incomparable for new homes.

If you wish to decorate your living, dining, or any other rooms, write to our Department of Home Decoration. Describe the room or rooms, and receive free sample of beautiful Sanitas reproductions with sketches of clever new effects.

STANDARD OIL CLOTH COMPANY
Dept 11 320 Broadway, New York City

"WIPE OFF THE DIRT"

"The Complete Hotel"
Hotel Statler
BUFFALO
300 Rooms - 300 Baths
Modern in Construction. Artistic in Appointment. Complete in Equipment. Perfect in Service.
Circulating Ice Water to All Rooms
European Plan Exclusively

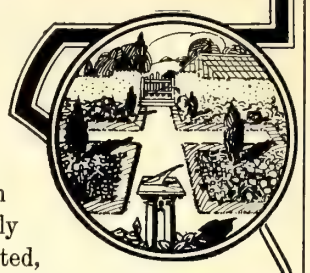
"You choose the colors—
Thread & Thrum Rugs—
we'll make the rug."

YOUR own individual rug, different from all other rugs, and in a high-class wool fabric adapted to your own decorations. If the rugs in stock colors do not suit your requirements we will make one that will, either plain, self-tone or contrast. All sizes up to twelve feet wide, any length. Seamless, wool weft, reversible, heavy and durable. Sold by best shops or write for color line and price list to ARNOLD, CONSTABLE & CO., NEW YORK.
THREAD & THRUM WORKSHOP, AUBURN, N. Y.

Ask your dealer for
ELECTRIC GARDEN HOSE
The Corrugated Hose made in Wilmington, Delaware. Identify by the RED label on every length.

House & Garden

The Magazine of Good Taste for the Home



has recently changed hands and been brought into a new organization of trained magazine men. It is edited by one of the ablest and most experienced men in the country. House & Garden superbly printed on tinted paper and beautifully illustrated, is devoted to the home—its planning, building, furnishing and decoration, and the planting and care of the garden and grounds. It treats of every side of house-building,—Colonial, English half-timber, stucco, bungalows and many others; interior decoration, furnishing, hallways, living-rooms, wall coverings, draperies, rugs, pictures and a thousand and one problems that confront the home-maker. The surroundings of a house contribute equally to its comfort and beauty and House & Garden deals adequately with this end of the subject. Its articles on gardening and landscaping are practical and helpful. It covers every phase of the flower and vegetable garden,—shrubs, trees, bulbs, the window garden, the water garden, the greenhouse and the multitude of things that every amateur gardener wants to know. It has a department for the beginner from which the most inexperienced can work with success.

Altogether, House & Garden is a new sort of magazine and is brimming over with practical help and suggestions for making the home more tasteful and comfortable.

A FEW OF THE SUBJECTS IN

HOUSE & GARDEN FOR NOVEMBER

INDICATE THE SCOPE AND INTEREST OF THE MAGAZINE:

Using the Porch All Winter—Which will tell how to get 12-months' service instead of four out of one of the most important parts of the House.

Forcing Bulbs for Indoor Bloom; or, how to grow flowers during the long dreary Winter months, by Luke J. Doogue.

First Steps—By Alex. B. Trowbridge, Architect. An intimate talk to prospective home-owners on some of the things they will have to pay for besides merely the house.

The Making of One Country Home—By Jeannette L. Gilder. The story of the acquisition and reconstruction of a quaint old farmhouse.

Furniture for the Living-Room and Library — New types of modern furniture, what they cost and how they should be used.

Stairways — A page of pictures showing distinctive American types.

Getting into a Place—By Grace Tabor. This article discusses the matter of entrances, driveways, gates and the laying out of approaches for the typical suburban plot.

Things You Can Build into the House—By Margaret Greenleaf. Practical suggestions for window-seats, bookcases, corner cupboards and other conveniences.

Chimneys—A page of pictures showing a number of kinds used in modern homes.

Japanese Prints for Home Decoration—Telling of decoration for the walls of living-room or hall; how the prints should be used; how framed, etc. By Sherril Schell.

The Secret of Chrysanthemum Culture—How to have this beautiful flower of the Fall months in your garden and how to raise prize blooms.

A California Chalet—A distinct type of an informal country home in one of the Pacific Slope Valleys.

The Available Heating Systems—What they are, how they work and the comparative costs for installation and maintenance.

An Old-Time House and Garden of Essex — A remodeled Colonial Homestead.

All the Maples—Which of them are the best trees for lawn, street and driveway and how to recognize them by their leaves.

The Beginners' Garden—A page for the novice. There are also departments of interior decoration and of the garden, devoted to the solution of subscribers' individual problems.

TO NEW SUBSCRIBERS—Send us $3.00 at once (the regular subscription price) and we will enter your subscription to HOUSE & GARDEN from now until 1911, 14 months in all. This will include the superb Christmas issue, the great Building Number in January and the Double Spring Gardening Number in April.

USE THE COUPON

25c. a copy at all news-stands. $3.00 a year

McBRIDE, WINSTON & CO., 6 West 29th Street, New York City

McBRIDE, WINSTON & CO., Publishers
6 West 29th Street, New York City
Gentlemen: — I enclose $3.00 for which enter my subscription to HOUSE & GARDEN for 14 months.
Signed.....

JUST PUBLISHED JUST PUBLISHED

CRAFTSMAN HOMES

By GUSTAV STICKLEY

A Book for Architects, Builders, Homemakers and Housekeepers

Containing practical house plans, exteriors and interiors, suggestions for gardens, gates and pergolas, models for furniture, metal work and needlework. The house plans comprise a choice collection of about fifty designs of country, suburban and town houses, bungalows, cottages and cabins, ranging in cost from $500 to $15,000. They have won high recognition as the first fearless expression of an independent national style of building, that meet the needs and characteristics of the American people.

CONTENTS: Craftsman houses and plans, halls and stairways, living-rooms, dining-rooms, porches and terraces, the effective use of cobblestones, gates and gateways, gardens, exterior features and materials, wall space and color schemes, interior woodwork and structural features, choice of woods, floors and how to finish them, treatment of interior woodwork, decoration and finishing, home cabinet-making, and metal work.

SIZES: 8½ x 11 inches. Fine India tint plate paper. Duotone sepia ink. Over 200 half-tone engravings of exteriors and interiors. Four full-page color plates and portrait sketch. Bound in full linen crash. Price, $2.00 net. Postage, $2.24.

MUNN & CO., Inc. 361 Broadway, New York

base of the roof should be so extended as to rest on the walls at their greatest separation, and the roof should project considerably so as to cap and hold together the structure. At Chemakha, in 1902, a roof of this kind prevented the destruction of the building. The material is also important. Tiles should be prohibited, on account of their fragility and liability to fall. Slates, on the contrary, if properly laid and fastened, form a strong roof. Zinc and corrugated iron in large sheets are the best materials. Metal roofs have the further advantage of being light and elastic. For flat roofs armored concrete is best.

Japan offers the best field for studying the effect of earthquakes on wooden buildings, but the comparative immunity of Japanese buildings is due largely to their small height and dimensions and light materials. Only their tile roofs are heavy, and the concave form of these adds to their strength. The house, of one or two stories, is placed on stone blocks; the framing, even of the roof, consists of vertical and horizontal elements without inclined braces; the walls of hurdles covered with mortar or paper panels. This construction produces an independent, deformable, and elastic building, which moves and inclines without danger so long as the tenons hold. Its very weakness constitutes its strength, but this system of construction cannot be generally recommended. Permanence of form is the first requisite, and this has been recognized by the Japanese earthquake commission. After the earthquake of Lisbon in 1755, stringent regulations were enforced, and the well-braced buildings thereafter constructed have shown strong resistance to subsequent earthquakes.

The steel-frame building presents all the advantages of the wood-frame building together with less risk of fire, although in a conflagration its elements, if not protected, may become deformed and carry down the building. Steel-frame construction permits the attainment of great dimensions and almost unlimited height. The steel skyscrapers of San Francisco withstood the earthquake nobly. But these high towers must be firmly anchored to the ground. Although the general frame resists well, this is not the case with isolated supports, such as posts, which become sheared or twisted. Examples of this were observed in San Francisco. In particular, steel posts supporting heavy floors were bent by the inertia of the latter in horizontal oscillations. The greatest danger connected with large steel buildings resides in the construction of the walls, which are commonly formed of panels of brick, which become detached and fall. The British in India have adopted the artifice of inclosing a wall between two steel gratings, which may be imbedded in cement, but this is an approximation toward armored concrete construction, which might better be frankly adopted.

All the desired qualities are found to the greatest extent in armored concrete; even the risk of fire is reduced to a minimum. It was for the sake of protection against fire that American builders were led to envelop steel posts and girders in concrete, after coverings of terra cotta had proven unsatisfactory. Armored concrete, furthermore, permits the construction of an indeformable block, all whose parts, walls, floors, and even partitions, although elastic, are firmly connected and mutually supporting. Buildings of moderate height may be simply placed on a bed of armored concrete on the ground, but high buildings should be firmly anchored. When the upper soil is soft, a useful resource will be found in solid concrete piles cast in shafts made with a pile-driver, which compresses the surrounding soil. The best argument in favor of armored concrete is the behavior of build-

ings of this material, which remained erect and intact while other buildings were destroyed in the catastrophes of San Francisco and Messina.

A NEW KIND OF ILLUMINATING GAS

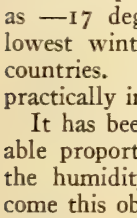
WHAT is known as the De Laitte system of lighting houses with gas has attracted not a little attention in Europe. Private electric light, coal, or kerosene gas plants, because of their very large initial cost, cannot always be installed. Since gasoline has come into fairly common use and is obtainable almost everywhere, a French inventor, M. Benoit de Laitte, has devised a method of generating gas from gasoline. When gasoline vapor is passed into pipes having a temperature lower than that at which the evaporation is accomplished, some of the gasoline will recondense into liquid form. Because the supply piping is underground and exposed to low temperature in winter, not a little trouble is thus caused. De Laitte has devised a carbureter which is intended completely to vaporize gasoline in very cold weather without the application of heat. In it the temperature of evaporation falls as low as —17 deg. Fahr., which is far below the lowest winter temperature in most civilized countries. For this reason condensation is practically impossible.

It has been found that air will absorb variable proportions of gasoline, depending upon the humidity of the atmosphere. To overcome this objection, De Laitte extracts all the moisture from the air, which is carefully kept from contact with water, and thus the air on carburetion is perfectly dry. Hence, a uniform gas is produced without the possibility of variation.

The principle of the De Laitte process consists in the fact that a measured quantity of gasoline is converted into vapor by a measured quantity of air passed in a brisk current over a large surface of gasoline. The particular part of the apparatus in which this is accomplished is the carbureter. The current of air is produced by means of a drum, which induces a certain fixed quantity of air for each revolution, and this movement is obtained by a gear in such a manner that for every cubic foot of air taken up, a fixed amount of gasoline is induced into the carbureter. By this means a gas of unvarying quality is obtained, and perfect evaporation effected.

The carburetion takes place in a flat metal tube of considerable width and small depth. The gasoline flows downward, covering a large surface, over which the rapid current of air is conducted. The evaporation thus caused is so vigorous, that absolutely no residue is left when good gasoline is employed, even at a temperature many degrees below the freezing-point. The proper gas is collected in a small gosometer, which serves to regulate the pressure, and which acts on the driving power of the drum in such a way that when no gas is required, the apparatus is stopped.

Between thirty and forty towns are lighted apparatus is exceedingly small—a weight, water power, electricity, hot air, or a gas motor being employed. The gas is burned with incandescent mantles, but in consequence of the exceedingly high temperature and combustion, the illuminating power is considerably increased.



Cattle Manure in Bags *Shredded or Pulverized*

Best and safest manure for florists and greenhouse use, absolutely pure, no waste, no danger. Write for circular and prices.

The Pulverized Manure Co.
21 Union Stock Yards, Chicago.

Cut Down Your Coal Bills

Cut out your doctor's bills and promote your family's health and comfort by installing a

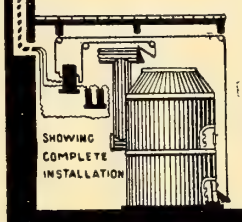
HOWARD THERMOSTAT
WITH CLOCK ATTACHMENT

Easily applied to all heating plants. Automatically keeps your home at an even, healthful temperature all winter long.

If you prefer to have your house cooler at night than during the day, the Clock Attachment saves you the trouble of "getting up early to turn on the drafts." Upon retiring, wind the clock and alarm springs, set the alarm-hand about one hour in advance of rising time, and turn the pointer to the temperature desired for the night. At the hour set, the pointer silently moves up to the temperature desired for the day. The motor then makes the correct adjustment of draft and check, and when you arise the house will be at the desired temperature.

Guaranteed for 10 years. Thousands in use more than 25 years.

Coal saved pays for it; therefore it costs you nothing. The most reliable and most perfect heat-controlling device ever placed on the market.



Howard Thermostats Are Sold by Heating Men and Electricians Everywhere

If you will kindly send us the name and address of your furnace man, steamfitter or electrician, we will send you our booklet No. 18, which gives complete details about the Howard Thermostat. Write to-day.

HOWARD THERMOSTAT CO., 354 W. 1st St., Oswego, N.Y.

New England Office: 188 Franklin Street, Boston, Mass.
New York City Office: 143 Liberty Street, Wm. A. Kitts, Jr., Manager.
Canadian Representative: The Gurney Foundry Co., Ltd., Toronto, Can.

Do you live in an iceberg?

Is the temperature of your home in zero or high-windy weather so uneven and drafty as to make a hardened arctic explorer shiver and long for the Frozen North? The extreme cold is not so trying as is the *uneven* warmth, the draftiness, and the dampness of the average home. These conditions can forever be corrected by putting in an outfit of

AMERICAN RADIATORS & IDEAL BOILERS

IDEAL Boilers and AMERICAN Radiators for Hot-Water, Vacuum, or Low-Pressure Steam heating will give you just the degree of temperature you want no matter what the weather conditions.

The Ideal Sylphon Regulator supplied with all IDEAL Steam Boilers is the greatest improvement made in a century in controlling draft and check dampers, for sure heating, to stop fuel waste, and prevent fluctuations in the temperature of the rooms above. Our complete catalog tells of other equally important features.

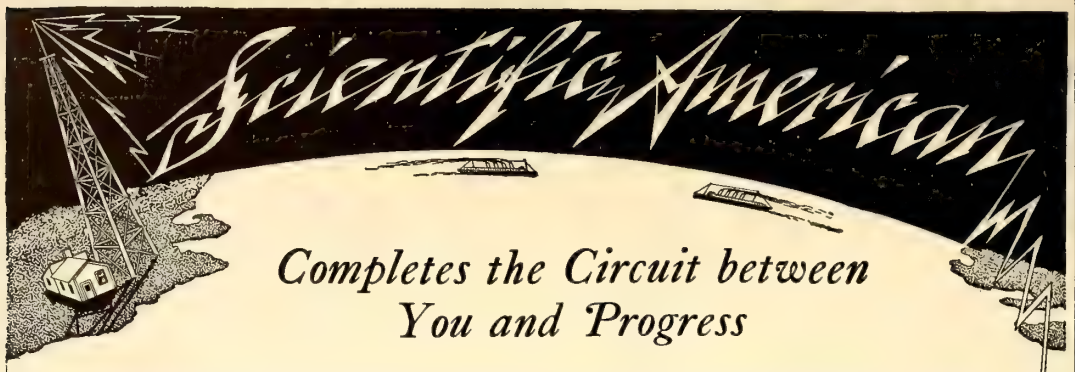
A No. 3-22 IDEAL Boiler and 600 ft. of 38-in. AMERICAN Radiators, costing the owner $255, were used to Hot-Water heat this cottage.

At this price the goods can be bought of any reputable, competent Fitter. This did not include cost of labor, pipe, valves, freight, etc., which installation is extra and varies according to climatic and other conditions.

Whether your cottage, house, store, building, church, etc., is OLD or new, farm or city, do not delay investigating this best *investment* feature of any building. Saves fuel, labor, repairs—gives greatest comfort, protects the health, and insures household cleanliness, safety, and durability. Put in without disturbing old heating methods until ready to start fire in the new.

If the passage-ways in your home are at times as shivery as the land of Cook and Peary and stepping on bare floors is like crossing ice floes, you will enjoy our free book telling lots of things about our sure heating and its economies that it will pay you well to know. Write to-day, describing kind of building you wish to heat. Showrooms and Warehouses in all large cities.

Write Dept. 6 **AMERICAN RADIATOR COMPANY** CHICAGO



Completes the Circuit between You and Progress

¶ CLEAN, WHOLESOME, INSTRUCTIVE AND ENTERTAINING, THE

Scientific American

is unique in the current literature of the world and ranks among the *great periodicals* which are regarded as *distinctly American Institutions.*

Its accurate, popularly written articles open to the intelligent mind the mysteries of science, mirror the inventive genius of the American Workman, show how dreams have become realities and that however well things have been done heretofore, better means of accomplishing the same results are constantly being devised. In a word, the "SCIENTIFIC AMERICAN" is a source of inspiration and entertainment to every intelligent reader.

DURING THE YEAR 1910

there will be found in the weekly issues of the "SCIENTIFIC AMERICAN" illustrated articles on the leading events of the day in regard to Aeronautics, Automobiles, the Navy, Engineering Works, Scientific News, etc. Our brief notes on Electricity, Engineering and Science are published in each issue. Our Correspondence Column contains letters from all parts of the world. In our Notes and Queries Department are published replies to correspondents in regard to the widest range of topics, and an able corps of experts is engaged to attend to these queries. A complete list of all patents issued in the United States appears in each issue. A department entitled the "Handy Man's Workshop" is published every second or third week. We have special correspondents in the various capitals of Europe.

The "SCIENTIFIC AMERICAN" is, in fact, a **Newspaper of Progress,** and as such no intelligent family can afford to be without it. **Subscription price, $3.00 per year.**

Read the "SCIENTIFIC AMERICAN" for Two Months Free

With a view of extending our subscription list we are prepared for a limited period to make you the following:

SPECIAL OFFER

If you will fill out the attached coupon and mail it to us with a remittance of $3.00 in payment for a New subscription for "SCIENTIFIC AMERICAN" we will enter the subscription for one year commencing January 1, 1910, and we will also send you *absolutely free* the numbers for November and December, 1909.

You will thus receive the "SCIENTIFIC AMERICAN" FOR FOURTEEN MONTHS for the price of one year's subscription. To those who act quickly we will also send in addition to the above a copy of our Special "Hudson-Fulton" Souvenir number. This magnificent number has thirty-two pages brimful of timely information and illustrations regarding the great explorer and the famous engineer, giving a history of the evolution of the River Steamboat in the United States and other topics of interest.

As the number of copies of this "Grand Souvenir" available for this purpose is very limited it will be necessary for you to send in your order at once in order to secure a copy.

MUNN & CO., Inc.

365 BROADWAY NEW YORK, N. Y.

TEAR OFF HERE

COUPON

MUNN & CO., Inc.

Enclosed please find $3.00 for which send me "Scientific American" for one year from Jan. 1, 1910, with Nov. and Dec., 1909, numbers and a copy of Special "Hudson - Fulton" Souvenir number free as per special offer.

Name .....

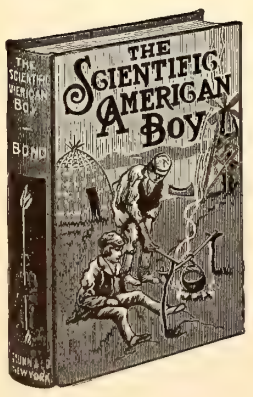
P. O. .....

State .....

The Scientific American Boy

By A. RUSSELL BOND

12mo. 320 Pages. 340 Illustrations. Price, $2.00, Postpaid.



¶ This is a story of outdoor boy life, suggesting a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. In each instance complete practical instructions are given for building the various articles. ¶ The needs of the boy camper are supplied by the directions for making tramping outfits, sleeping bags and tents; also such other shelters as tree houses, straw huts, log cabins and caves. ¶ The winter diversions include instructions for making six kinds of skate sails and eight kinds of snowshoes and skis, besides ice boats, scooters, sledges, toboggans and a peculiar Swedish contrivance called a "rennwolf." ¶ Among the more instructive subjects covered are surveying, wigwagging, heliographing and bridge-building, in which six different kinds of bridges, including a simple cantilever bridge, are described.

FOR SALE AT ALL BOOKSTORES

Between thirty and forty towns are lighted on this plan in Europe. In England there are about six thousand installations, which include hundreds of public buildings, railway stations, etc. About twenty or thirty plants are installed in India.

SOAPS FOR REMOVING SPOTS

MANY soaps sold as spot-removers are ordinary cocoanut-oil soaps, and remove only the spots which are prepared for the purpose by the vender. For example, spots made by daubing cotton goods with a mixture of tar and acid can be removed with pure water, and completely disappear when washed with ordinary soap. True spot-removing soaps contain oxgall and turpentine, which can be detected by their characteristic and powerful odors, even if the soaps are scented.

A good spot-removing soap may be made by mixing 20 parts by weight of good hard white soap, in very small pieces, with 8 parts of water and 12 parts of oxgall. The mixture is allowed to stand over night and is then heated gently until solution is complete. The heating is continued a little longer, in order to evaporate some of the water, and ½ part of oil of turpentine and ¼ part of benzine are stirred in, after the vessel has been removed from the fire. The still liquid soap is then colored with a little ultramarine green, dissolved in ammonia, and is poured into molds, which are at once covered.

The following process is also recommended, but it requires some care, as the soap is easily separated by agitation, especially if the oxgall is not fresh. In a vessel heated on a water bath, 28 parts by weight of cocoanut oil are thoroughly incorporated with 5 parts of talc or fuller's earth, 1/10 part of brilliant green and 1/50 part of ultramarine green. The mixture is allowed to cool to 90 deg. F.; 14 parts by weight of lye of a strength of 38 Baumé are then added and, after saponification is completed, 5 parts of oxgall are stirred in. If any separation takes place, the vessel is closely covered and heated on the water bath until the mixture becomes uniform. Finally, ¼ part of turpentine and about 8 parts of benzine are added and the soap is poured into molds.

COMBATING INJURIOUS INSECTS WITH THE AID OF THEIR NATURAL ENEMIES

AN INTERESTING instance of successful warfare waged against injurious insects with the aid of their natural enemies is reported from Hawaii, where the sugar plantations have in recent years been threatened with annihilation by the ravages of a small cicada, little more than one-eighth of an inch long. Professor Kirkaldy, the director of the Honolulu Entomological Station, has described the little insect and named it *Parkinsiella saccharicida.* It pierces the stem of the sugar-cane and extracts the sap, causing the plant to wither and die. The formidable character of this insect pest is due to the amazing rapidity with which it multiplies. Six generations are produced annually and, on assumption that 20 females of each brood live to reproduce their kind, it is estimated that the progeny of one female, produced in the course of a single year, numbers 64,000,000. The insect was undoubtedly introduced with the sugar-cane from other countries into Hawaii, where it has multiplied enormously, as its natural enemies, which limit its numbers elsewhere, do not appear to have been imported with it. Entomologists were, therefore, sent abroad to discover the original home of the little cicada, to find its natural enemies, and to bring these

to Hawaii. It was necessary to extend these laborious and costly investigations to every part of the world from which sugar-cane plants have been imported. The home of the insect was finally located in Australia, where two of its most formidable enemies were also found. These are two species of ichneumon fly, of the genera *Paranargus* and *Ovetertastichus,* which lay their eggs in the eggs of the cicada. The first-named species destroys only the cicada eggs in which its own eggs are deposited, but the other species pierces only one egg of each cluster of cicada eggs and its larva destroys the entire cluster. Both species have been successfully colonized in Hawaii and the prodigious increase of the sugar-cane cicada has thus been checked.

NEW BOOKS

ONE HUNDRED COUNTRY HOUSES. MODERN AMERICAN EXAMPLES. By Aymar Embury II. New York: The Century Co. Pp. 16+264. Price, $3.00; postage, 30 cents.

A merely casual examination of this interesting book discloses the pertinent fact that its author has here gathered views of the hundred country houses he most admires in America; houses, at least, that he deems worthy of offering to the inspection of others; houses that, in a very full sense of the word, invite and compel the admiration of every reader. He does not, of course, tell us that of all the houses he knows or knows of these are unqualifiedly the best and most interesting; but the collection does not include a single house wanting in merit nor one that may not rightly be included in any survey of the recent country work of our contemporary American architects. No one knows better than Mr. Embury himself that the collection could be greatly expanded, but every book has its limits in space, and we can only be grateful that so many good buildings are illustrated within the covers of a single volume.

This is a book of very distinct character and very well-defined purpose. The author avoids the expensive house in which so many of our architects have accomplished their greatest monetary triumphs, and contents himself with dwellings of comparatively moderate cost. On the other hand, he avoids, with equal definiteness, the "cheap" house, of which we hear such a clamor, and see so little in real excellence. In other words, he has chosen the type of house that appeals most quickly to people who need to know of houses or who may be expected to possess an intelligent interest in them.

The book opens with a brief introductory chapter, and the author then takes up his subject in houses of related character. He classifies his subject under the headings of "New England Colonial," "Southern Colonial," "Classic Revival," "Dutch Colonial," "Spanish or Mission," "American Farmhouse," 'Elizabethan," "Modern English," "Italian," "Art Nouveau," and "Japanesque." The concluding chapters treat of "The House and Garden" and "The Plan of the House." In the emphasis laid on style, as indicated by the chapter headings, the author seems to attach an importance to this aspect of house design that he, perhaps, does not really believe in. This is a phase of architecture that appeals very keenly to the layman and should by no means be encouraged. It is utterly immaterial as to what "style" a house is designed in so long as it is a good design and a good house. But every book requires some arrangement, and that adopted here was doubtless desirable for consistent division.

Save in the last chapter Mr. Embury deals only with the exterior of houses. His is not

The Only Player Piano in the World That Accents as Great Pianists Do!

Accents the Melody Without Affecting the Accompaniment

The wonderful accenting device of the SOLO-APOLLO makes it possible for you **to produce every shading, every brilliant effect exactly as the composer intended.** The melody is brought into strong relief without subduing the accompaniment, as is done in other so-called accenting devices.

The First 88-Note Player In the Field

The Melville Clark APOLLO was the first Player Piano that **covered the entire 88-note range of the keyboard.** It is the only 88-note Player Piano **with eight years of perfection behind it.** The new SOLO-APOLLO contains all the superior and exclusive features of the 88-note APOLLO Player Piano.

MELVILLE CLARK SOLO APOLLO PLAYER 88-Note PIANO

A Player Piano is of value, in proportion as it expresses the intent of the composer

YOU FIND IT IN NO OTHER PLAYER PIANO

The accenting device is to be found in no other Player Piano in the world. **No stops or levers are required to produce the beautiful effects in the** SOLO-APOLLO—the merest novice can attain them immediately.

WHAT THE SOLO-APOLLO WILL DO

It accents perfectly **one** or **several notes in a chord struck** simultaneously; one note or any number of notes in **a chromatic** run, **single, double or treble.**

It accents perfectly **any number of notes** in **the most intricate passage** possible on the piano with a crescendo while accenting and **will accent at the highest possible tempo.** The accented notes or chords always **come in their proper place with rare infallibility.**

THE REMARKABLE HUMAN TOUCH

The keys of the APOLLO Player Pianos are struck by the pneumatic fingers **just as the human fingers strike them, downward,** which is the method **observed in manual playing.** This naturally secures **the real human expression.**

TRANSPOSE TO FIVE OR MORE DIFFERENT KEYS

All APOLLO PLAYERS are fitted with the **adjusting and transposing** device by which you can change at the touch of a finger to five or more keys to suit any voice or accompanying instrument.

The self-acting motor automatically rewinds the music on the roll, and thus saves you work.

The SOLO-APOLLO accents the most difficult passages in a more perfect manner than the human hand, because the human hand at best is fallible.

The Melville Clark Piano, in which the Apollo Player action is placed, is A CRYSTALLIZATION OF THE HIGHEST SKILL IN PIANO ARTISTRY. Our SOLO-APOLLO Booklet, and name of the nearest dealer, who will be glad to demonstrate this beautiful Player-Piano, sent on request. Address (5)

Melville Clark Piano Company, 424 Steinway Building, Chicago

PERSONAL attention to the selection of hardware trimmings will be to your advantage if you are building or remodeling a home. Quality and durability of the hardware, the style of architecture with which it is to harmonize, your architect's advice and your own taste should all be considered in determining the design. The result is certain to be entirely satisfactory if the chosen pattern is selected from

Sargent's Artistic Hardware

It possesses quality in a high degree, a decorative value appreciated by those whose object is to make a home artistic and complete in all its appointments. If the house you are planning is of the French order of architecture, Georgian, Colonial or other style,

SARGENT'S Book of Designs—Sent FREE

will enable you to make your selection from a number of patterns especially designed for the style of architecture you prefer. The seventy and more patterns illustrated will offer a wide choice. THE COLONIAL BOOK—also free—shows Door Handles, Cut Glass Knobs, Knockers, etc. Address

SARGENT & COMPANY, 156 Leonard St., New York.

FIFTY-FOUR YEARS OF QUALITY

GUARANTEE LABELS

Guarantee labels on enameled ironware are various and are variously translated in practice.

Careful architects have come to understand that it is the spirit behind the guarantee that counts for most after all. The liberal, unquestioning, make-good policy behind every Wolff guarantee is responsible for unvarying Wolff specification as often as is the leadership of Wolff design.

L. WOLFF MANUFACTURING CO.

Established 1855

MANUFACTURERS OF PLUMBING GOODS EXCLUSIVELY

The only complete line made by any one firm

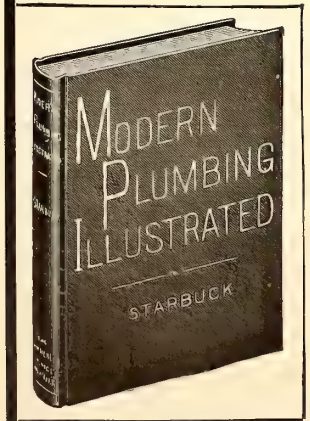
GENERAL OFFICES: 601 LAKE STREET } CHICAGO
SHOWROOMS: 91 DEARBORN STREET }

DENVER TRENTON

BRANCH OFFICES

Minneapolis, Minn.: 615 Northwestern Building
Kansas City, Mo.: 1209 Scarrett Building
San Francisco, Cal.: Monadnock Building
Cleveland, Ohio: Builders' Exchange
Washington, D. C.: 327-328 Bond Building
Buffalo, N. Y.: 77 Richmond Avenue
Omaha, Neb.: 1108-12 Nicholas Street

Modern Plumbing Illustrated



By R. M. STARBUCK

400 (10¼ x 7½) PAGES

55 FULL PAGES OF ENGRAVINGS

PRICE, $4.00

¶ A comprehensive and up-to-date work illustrating and describing the Drainage and Ventilation of Dwellings, Apartments and Public Buildings, etc. The very latest and most approved methods in all branches of Sanitary Installation are given.

¶ Many of the subjects treated in the text and illustrated follow in the next column.

MUNN & CO., Inc., Publishers

Scientific American Office, 363 Broadway, New York

SOME OF THE SUBJECTS TREATED

Connections, sizes and all working data for Plumbing Fixtures and Groups of Fixtures
Traps — Venting
Connecting and Supporting of Soil Pipe
House Trap and Fresh-Air Inlet
Floor and Yard Drains, etc.
Rain Leaders
Sub-soil Drainage
Floor Connections
Roof Connections
Local Venting
Bath Room Connections [etc.
Automatic Flushing for Factories, School Houses,
Use of Flushing Valves
Modern Fixtures for Public Toilet Rooms
Durham System
Plumbing Construction without use of Lead
Automatic Sewage Lift — Sump Tank
Disposal of Sewage of Underground Floors of High Buildings
Country Plumbing
Cesspools
The Electrolysis of Underground Pipes
Septic Tanks and Sewage Siphons
Pneumatic Water Supply, Rams, etc.
Examples of Poor Practice
Roughing — Testing
Continuous Venting for all classes of Work
Circuit and Loop Venting
Use of Special Waste and Vent Fittings
Cellar Work
House Drain— House Sewer — Sewer Connections
Plumbing for Cottage House
Plumbing for Residence
Plumbing for Two-Flat House
Plumbing for Apartment Houses
Plumbing for Office Building
Plumbing for Public Toilet Rooms
Plumbing for Bath Establishment
Plumbing for Engine Houses
Plumbing for Stables
Plumbing for Factories
Plumbing for School Houses, etc. [by Electricity
Thawing of Underground Mains and Service Pipes

a book of descriptions, but a discussion of the architectural treatment of exteriors. The limitation is an important one, since it would obviously have been impossible to describe in detail the entire contents of a hundred houses within any reasonable compass, and the exigencies of book-making have again necessitated a definite limitation. This limitation need not, however, be regretted, for the outside of the house is, in many respects, its most important part, and the same sympathetic discussion of these exteriors is the best kind of architectural criticism, presented with the friendly appreciation of the man who knows his own mind and who himself is a master of the craft of which he writes so delightfully.

For Mr. Embury's book is delightful in every way. His photographs are charming and admirably selected, and his text confessedly critical, yet always appreciative—since he concerns himself only with houses meriting commendation—is charmingly written. It is a book that must distinctly help the cause of good architecture in America, and it deserves, and no doubt will have, a cordial welcome from the readers to whom it especially appeals. It is easily the most interesting and most helpful book of its kind that has appeared for some years.

FOREST TREES OF THE PACIFIC SLOPE. By George Sudworth, Forest Service, U. S. Department of Agriculture. Washington: Government Office. Pp. 441.

This important book is the first of four which are to deal with all the native forest trees of North America north of the Mexican boundary. The region treated includes Alaska, British Columbia, Washington, Oregon and California. It thus contains an account of the tree species known to inhabit the Pacific region, numbering a hundred and fifty in all. An extended subject is thus compressed within very reasonable compass. The descriptions and information concerning the trees are concisely given, and the value of the book is enhanced with numerous illustrations.

STRUCTURAL DETAILS, OR ELEMENTS OF DESIGN IN HEAVY FRAMING. By Henry S. Jacoby. New York: John Wiley & Sons. Pp. 9+368. Price, $2.25 net.

The title of this volume corresponds to a course of instruction conducted by the author in the College of Civil Engineering in Cornell University during the past nineteen years. In this course the students receive their first instruction in the application of the principles of mechanics to the design of the details of structures. Experience has shown that in many respects problems involving timber construction are better adapted for this purpose than if confined to structural steel.

If it may appear at first as if too much attention to details is given in the examples on the design of joints, beams and trusses, the author believes that the importance of careful study of every detail can only thus be properly emphasized. In practise it seems to be the exception rather than the rule to give the same attention to details of timber structures as to those of steel. In the interest of sound engineering practise it is essential that all connections and details have the same degree of security as the framed members.

In several articles the order of design is given in full, with a view of economizing the time of the student, and of promoting systematic habits in making the computations required, these objects being regarded as important elements in efficient engineering education and practise.

The volume is published in handsome form, and is amply illustrated with diagrams, sketches and views.

COLONIAL CANDLE FIXTURES

For cozy corners, dens and general illumination, or for emergency use in any room in the house. Especially desirable to use in case of failure of electricity or other illuminant. They can be converted into electric fixtures at any time by removing the candle-cups and adding sockets and necessary wire.

High-class designs, superbly finished in Polished Brass, Brushed Brass, Oxidized Copper, Steel, Dead Black or Nickel Plate. Unless otherwise ordered Brushed-Brass finish will be sent.

Sent prepaid to any part of the United States on receipt of price.

If not perfectly satisfactory on receipt they may be returned at our expense and money will be cheerfully refunded without asking questions.

No goods shipped until receipt of remittance

1-Light Bracket	- - $1.45		2-Light Fixture	- - $4.60	
2 " "	- - 2.15		3 " "	- - 5.40	
3 " "	- - 2.85		4 " "	- - 6.20	
			5 " "	- - 7.00	

Complete with candles ready to put up. On orders of two or more brackets or fixtures, an extra box of 1 dozen candles will be included.

THE F. W. WAKEFIELD BRASS CO.

Sole Manufacturers of Wakefield Standard Universal Lighting Fixtures (Patented)

Department G **VERMILION, O.**

Colonial Houses
FOR MODERN HOMES

A COLLECTION of designs of houses with Colonial (Georgian) details, but arranged with modern comforts and the completeness of the twentieth century.

Written & Illustrated by E. S. CHILD, *Architect*

They show large, correctly drawn perspectives, full floor plans, and complete descriptions, with estimates of cost. The designs are **new, original, unique, consistent,** but not stiff nor constrained. Made, not by an artist, but by an architect. They combine beauty of exterior with complete and convenient interiors, with kitchens, laundries, pantries and closets carefully and skilfully considered,

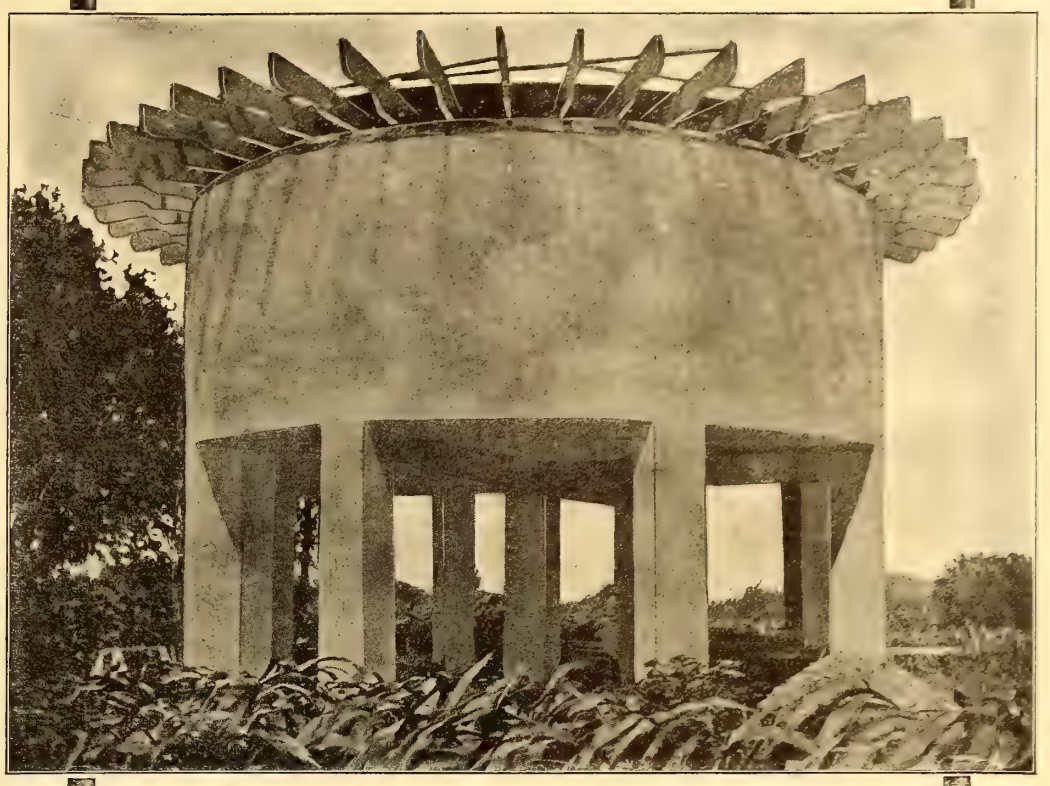
If you are at all interested in the subject, you will enjoy this publication.

Price, postpaid, $2.00

MUNN & CO. Inc., 361 Broadway, New York

FLOORS

ROOFS



A concrete tank erected on estate of Edmund Tatham, Katonah, New York

Frederick J. Sterner, Architect - - New York
De Lancey A. Cameron, Buider - - New York

Tank designed for storage supply of 15,000 gallons, built entirely of concrete reinforced with Clinton welded wire. Before roof was placed over tank, and during winter months, ice 10 inches thick formed on water stored therein. No cracks or leakage have developed.

Clinton Wire Cloth Company
CLINTON, MASS.

Ceilings

Partitions

Fireproofing Departments:
ALBERT OLIVER, 1 MADISON AVE., NEW YORK

WASHINGTON: Rosslyn Supply Co., Colorado Building
CHICAGO: Clinton Wire Cloth Co., 30-32 River Street
BUFFALO, N. Y.: Buffalo Wire Works Co., Inc.
CLEVELAND, OHIO: Carl, Horix 428 Garfield Building
ST. LOUIS: Hunkins-Willis Lime & Cement Co.
SAN FRANCISCO: L. A. Norris, 835 Monadnock Bldg
SEATTLE: L. A. Norris, 909 Alaska Building
SYRACUSE, N. Y.: National Construction Company

JUST PUBLISHED

The New Building Estimator

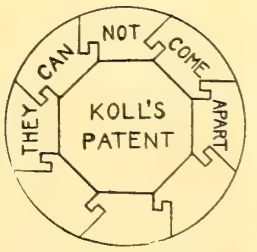
BY WILLIAM ARTHUR

A PRACTICAL guide to estimating the cost of labor and material in building construction from excavation to finish, with various practical examples of work presented in detail, and with labor figured chiefly in hours and quantities. A hand-book for architects, builders, contractors, appraisers, engineers, superintendents and draftsmen. Size, 4¾x6¾ inches, 437 pages, cloth bound. Price, $2.50 postpaid

AN INDISPENSABLE AID TO CONTRACTORS

A circular describing this book will be mailed on application
MUNN & CO. Inc., 361 BROADWAY, NEW YORK

Koll's Patent Lock-Joint Columns



The Best for Pergolas, Porches or Interior Use are made exclusively by

Hartmann - Sanders Company

Elston and Webster Avenues
CHICAGO, ILL.

Eastern Office, 1123 Broadway
NEW YORK

Send for Catalogue A-19 of Columns, or A-29 of Sun-dials, Pedestals, etc. (See also "Sweet's Index.")

The "30" Locomobile

1910

"30" Shaft Drive
The Locomobile

THE BEST BUILT CAR
Locomobile
IN AMERICA

"40" Chain Drive
Co. of America

New York
Philadelphia

Bridgeport Conn.
San Francisco

Boston
Chicago

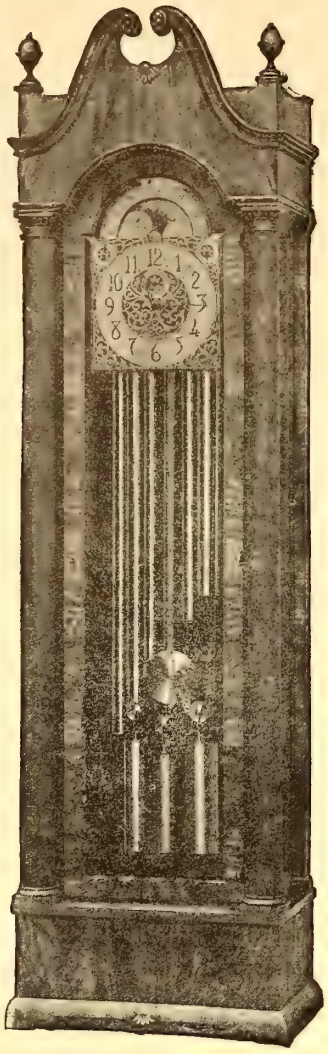
LICENSED UNDER THE SELDEN PATENT

Vol. VI DECEMBER, 1909 No. 12

7100
A512
Hart.

AMERICAN HOMES and GARDENS

$3.00 A YEAR MUNN & CO., INC., Publishers PRICE, 25 CENTS



HALL CLOCKS

Our line comprises the finest and most complete designs of high-class clocks on the market. Our movements are superior in nearly every detail and the purchaser is assured that he can buy the best by ordering a "Waltham."

We will soon have ready for delivery, our new Chiming Movement which chimes either Westminster, Whittington or St. Michaels.

Our "Willard" or Banjo Clock is a model of perfection and appeals to those who desire a first-class article in every respect.

If your local dealer does not sell our line, send direct for illustrated catalogue.

Waltham Clock Company
Waltham, Mass.

Erected for Howard Gould, at Castlegould, L. I.

You're Fond of Flowers?

Then why not have them all Winter?

A greenhouse will be one of the greatest pleasures you ever put your money in—and a lasting pleasure at that.

Flowers whenever you want them, either potted or cut—and fresh, crisp vegetables. A place to delightfully work off a little surplus energy and time. It doesn't necessarily have to be a large house—just large enough to look after yourself, if you want to.

May we send you some interesting information on the subject?

Hitchings & Company

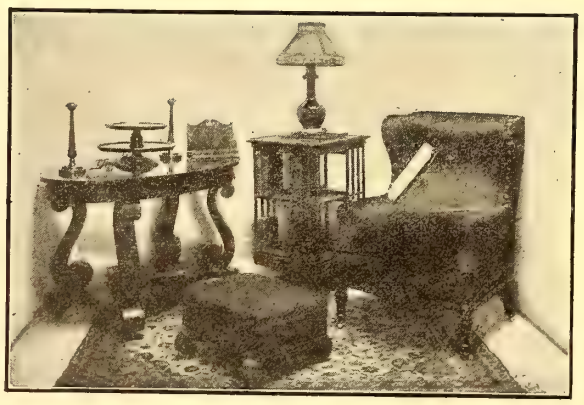
Designing and Sales Offices
1170 BROADWAY, NEW YORK

General Offices and Factory
ELIZABETH, N. J.

FLINT QUALITY FOUNDED 1840

FLINT'S FINE FURNITURE

FLINT QUALITY FOUNDED 1840



Holiday Gifts of Unusual Character

In the search for Holiday Gifts of unusual character our ten spacious floors, filled with everything that contributes to the luxury and comfort of the home, afford a wealth of practical suggestions in Gift Articles distinctly out of the ordinary.

There are many exclusive novelties and imported Objects of Art, also Tables, Desks, Chairs and unique pieces of Flint's Fine Furniture especially appropriate for Christmas Gifts. Many of these pieces cannot be duplicated. Early selection is advised.

Every piece is marked in plain figures and we particularly invite comparison of prices with the best values obtainable elsewhere.

GEO. C. FLINT CO.

43-47 WEST 23rd ST. 24-28 WEST 24th ST.

DRAPERIES FURNITURE DECORATIONS

The Signet of Furniture Quality
F. MOHR & CO.

Furniture From MAKER TO USER

MOHR-MADE Art Furniture is that distinctly different sort that not only instantly fascinates those in quest of the unique, but every article possesses the distinguishing attributes of durability and artistic design—bears on its face the indelible imprint of quality and character.

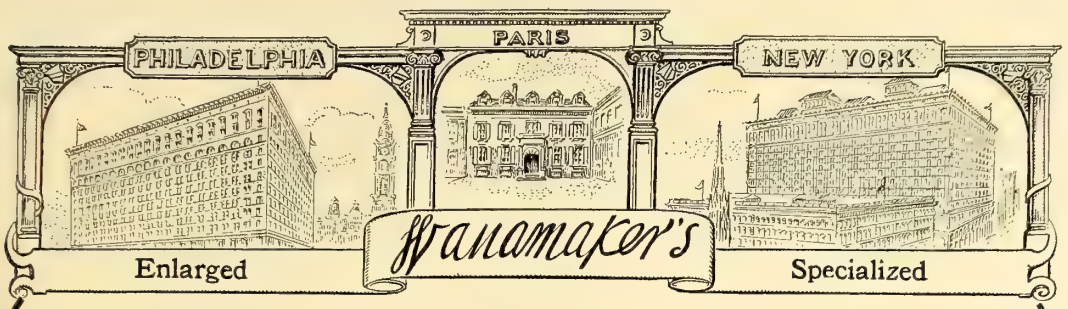
Consider us—our designers—our artists—our entire organization at your service. From penciled sketch to finished product we'll serve you intelligently with the knowledge born of more than fifty-eight years of untiring devotion to the art.

Designs, estimates, etc., cheerfully furnished—without charge.

F. MOHR & CO.

34th St. Cor. Broadway New York City

SMITHSONIAN
AUG 12 1985
LIBRARIES



A Wanamaker Suggestion

THE "TRENT" COLONIAL TEA TRAY

A Christmas Gift that Will Be a Real "Compliment of the Season"

Price, $12.65—Carriage Paid

FOR the approaching season of mistletoe and holly, what Christmas gift will carry such a cheery greeting as one which will recall pleasant Christmas memories?

What keepsake will awaken more charming retrospect and prove a more delicate and *real* compliment to your friend's taste, than one of these quaint, pretty, old-fashioned Colonial Tea Trays?

The "Trent" Tea Tray, No. D-336

The "Trent" Tray is a reproduction of a valuable antique supposed to have been made by Sheraton.

This Tray is made of specially selected Honduras mahogany, and is beautifully, though simply, inlaid with satinwood and holly border. It is wax eggshell finish to insure best service. The rim is shaped by hand. Solid brass handles.

Diameter (over all) 19½ inches, price $12.65—delivered anywhere in the United States.

Lovers of Colonial things, who would like to send some tasteful bit to a friend, will receive on request, pictures and prices from our exceptional collection. Tell us what you have in mind, or let us know what you care to expend, and we will help you make a selection.

Also tell us what you want in other lines—Furniture, Wearing Apparel for men, women and children, Dry Goods, Jewelry, Books, Fancy Goods, etc. The right catalog will come to you by next mail. The Wanamaker Holiday Catalogs of Gifts and Toys are now ready. Please write for them.

Section B—JOHN WANAMAKER—New York

Sample and Circular Free

A House Lined with

Mineral Wool

as shown in these sections, is ***Warm in Winter, Cool in Summer,*** and is thoroughly DEAFENED.

The lining is vermin proof; neither rats, mice, nor insects can make their way through or live in it. MINERAL WOOL checks the spread of fire and keeps out dampness.

CORRESPONDENCE SOLICITED

U. S. Mineral Wool Co.
140 Cedar St., NEW YORK CITY

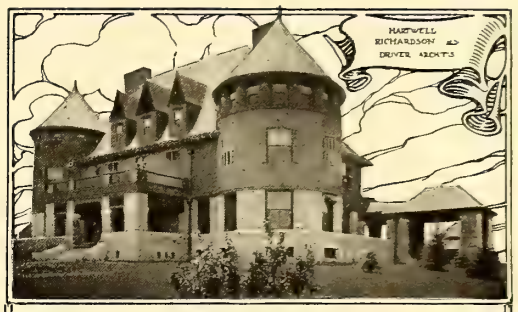
The Old Swinging Lantern

is not alone valuable for its quaint beauty of outline, but when hung from a corner of den or living-room, often proves most desirable as a reading lamp.

THE ENOS COMPANY
Makers of Lighting Fixtures

Office and Factory: SEVENTH AVE. & 16th ST.
Salesrooms: 36 WEST 37th ST.
NEW YORK

BALTIMORE—519 North Charles Street
SAN FRANCISCO—334 Sutter Street
TORONTO—94 King Street, West
PITTSBURGH—The Norton Co., Century Building
CHICAGO—W. K. Cowan Co., 203 Michigan Boulevard
SPOKANE—Cutter & Plummer, Inc.
SEATTLE—Cox & Gleason Co., 1914 Second Ave.
ST. LOUIS—N. O. Nelson Mfg. Co.
BOSTON—H. F. Estabrook, Inc., 9 Park Street
PORTLAND—J. C. English Co., 128 Park Street
BIRMINGHAM—R. W. Knight & Co.
LOS ANGELES—Brooks Decorating Co., 696 South Alvarado Street



DAMP **PETRIFAX** RESISTING

Interior and Exterior Coating for Brick, Concrete or Cement.

"If the Coat Fits, Put It On"

DEXTER BROTHERS'
English Shingle Stains

produce soft even shades in Moss Greens, Tile Reds, and Beautiful Silver Grays. *Write for Catalogue and Samples.*

DEXTER BROTHERS CO.
105 Broad Street, BOSTON
Branch Office, 542 Fifth Avenue, NEW YORK

AGENTS: H. M. Hooker Co., 651 Washington Blvd., Chicago; John D. S. Potts, 218 Race St., Philadelphia; F. H. McDonald, 619 The Gilbert, Grand Rapids, Mich.; F. T. Crowe & Co., Seattle, Spokane, Tacoma, Wash., and Portland, Ore.; M. D. Francis, Atlanta, Ga.; F. S. Coombs, Halifax, N. S.

Antiques

Photographs and descriptions of genuine antique pieces sent on request. List your wants of antiques with me.

RALPH WARREN BURNHAM
IPSWICH IN MASSACHUSETTS

No Night Fireman Needed

WITH THIS ONLY SELF-FEEDING HEATER

The Wilks Hot Water Heater furnishes the safest, easiest, cheapest way to provide heat and hot water at all times for farm buildings, garages, cottages, poultry houses, brooders, green-houses, golf and yacht clubs, etc., and is the *only heater that feeds itself.* Improved coal magazine keeps an even fire 10 hours.

Wilks Heaters

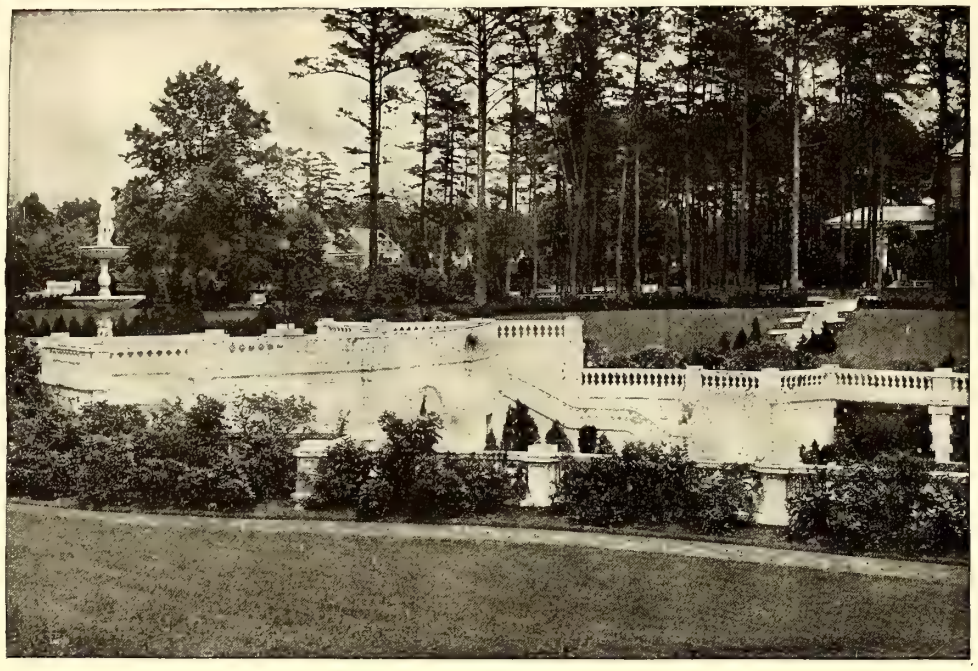
are built of best *steel* instead of the unreliable cast iron commonly used. Strongly riveted, caulked and reinforced. *Write for Free Book* describing, giving sizes, prices, etc. State full particulars and we will recommend the best heater for your needs, and guarantee it to give satisfaction if installed according to our directions.

S. WILKS MANUFACTURING CO.
3544 Shields Avenue, Chicago

American Estates and Gardens

By BARR FERREE

Editor of "American Homes and Gardens," Corresponding Member of the American Institute of Architects and of the Royal Institute of British Architects



4to. 11x13½ inches. Illuminated Cover and 275 Illustrations. 306 Pages.

Price, $10.00

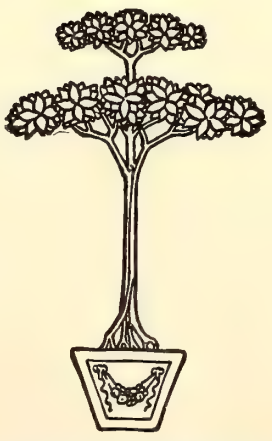
A sumptuous book, dealing with some of the most stately houses and charming gardens in America. The illustrations are in nearly all cases made from original photographs, and are beautifully printed on double coated paper. Attractively bound. The book will prove one of the most interesting books of the year and will fill the wants of those who desire to purchase a luxurious book on our American Homes.

Munn & Company
INC.,
Publishers of "Scientific American"
361 BROADWAY, NEW YORK

THE NEW AGRICULTURE

By
T. BYARD COLLINS

8vo. Cloth. 376 Pages
100 Illustrations
Price, $2 00, Postpaid



THIS new and valuable work sets forth the changes which have taken place in American agricultural methods which are transforming farm life, formerly so hard, into the most independent, peaceful and agreeable existence. Farm life to-day offers more inducements than at any previous period in the world's history, and it is calling millions from the desk. The present work is one of the most practical treatises on the subject ever issued. It contains 376 pages and 100 illustrations.

In brief, the Contents are as follows:

CHAPTER I. This chapter contains a general statement of the advantages of farm life.

CHAPTER II. Deals with the vast systems of irrigation which are transforming the Great West, and also hints at an application of water by artificial means in sections of the country where irrigation has not hitherto been found necessary.

CHAPTER III. Gives the principles and importance of fertilization and the possibility of inoculating the soil by means of nitrogen-gathering bacteria.

CHAPTER IV. Deals with the popular awaking to the importance of canals and good roads, and their relation to economy and social well-being.

CHAPTER V. Tells of some new interests which promise a profit.

CHAPTER VI. Gives a description of some new human creations in the plant world.

CHAPTER VII Deals with new varieties of grain, root and fruit, and the principles upon which these modifications are effected and the possibilities which they indicate.

CHAPTER VIII. Describes improper methods in agricultural practice.

CHAPTER IX. Devoted to new machinery by which the drudgery of life on the farm is being eliminated, making the farm a factory and the farmer the manager of it.

CHAPTER X. Shows the relation of a body of specialists to the American farmer, who can have the most expert advice upon every phase of his work without any expense whatever to himself.

MUNN & CO., INC., Publishers 361 Broadway, NEW YORK

Books of Special Interest to the HOME BUILDERS

BUNGALOWS, CAMPS AND MOUNTAIN HOUSES

This work contains many illustrations for Bungalows, Camps and Mountain Houses, from designs of a large number of Architects from all parts of the country. Substantially bound, in illuminated board covers, printed on coated paper; size, 8x9½ inches. Price, $2.00.

TWO FAMILY AND TWIN HOUSES

Illustrated by a large variety of designs of recent work by Architects making a specialty of this class of buildings, and will be found a most suggestive book to those desiring to improve properties. Size, 8x9½ inches; illustrated boards. Price, $2.00.

ARTISTIC PRACTICAL HOUSES

BY E. S. CHILD, Architect

A collection of unique houses, with sensible, practical floor arrangements for homes of moderate cost; 14x17; paper. Price, $2.00.

COLONIAL HOUSES FOR MODERN HOMES

BY E. S. CHILD, Architect

A collection of designs of houses with Colonial (Georgian) details, but arranged with modern comforts, and with the completeness of 20th Century. From $4,000 to $30,000. Written and illustrated by author. Price, $2.00.

COUNTRY AND SUBURBAN HOUSES

BY WM. DEWSNAP, Architect

A collection of interior and exterior perspective sketches and floor plans, for up-to-date houses in the Colonial, artistic and other styles. Paper, oblong. Price, $1.50.

MODERN HOMES

BY JACOB WIND, JR.

This collection of house designs gives many attractive one and two-story buildings, together with plans, and descriptions of same. Those desiring to build will find much suggestive matter in it. Oblong, paper. Price, 50 Cents.

APARTMENT HOUSES

Special number of the "Architects' and Builders' Magazine," devoted to Apartment House, illustrating many late designs for this class of houses together with floor plans. Price, 50 Cents.

DUPLEX APARTMENT HOUSES

This number of the "Architects' and Builders' Magazine" shows a number of designs, with floor plans and some interiors, with descriptive letterpress. Price, 20 Cents.

FLATS, URBAN HOUSES AND COTTAGE HOMES

EDITED BY W. SHAW SPARROW

Containing a large collection of suggestive designs, with introductory notes on the designing of Flats, and a number of plates in color, together with floor plans. Buckram, net price, $3.00.

THE MODERN HOME

BY WALTER SHAW SPARROW

This book illustrates the English Home of to-day, with chapters on interiors, furniture, wall-papers and other decorative essentials. 29 plates in color, 71 in black and white from the designs of many of the prominent English Architects. Buckram, net price, $3.00.

A BOOK ON COLONIAL ARCHITECTURE, ENTITLED

AMERICAN RENAISSANCE

BY JOY WHEELER DOW, Architect

A review of domestic architecture, illustrated by ninety-six half-tone plates. This book is a carefully prepared history of American Architecture from Colonial days, illustrated in the most elaborate manner. One large 8vo volume; cloth; gilt top. Price, $4.00.

RUMFORD FIREPLACES AND HOW THEY ARE MADE

BY G. CURTIS GILLESPIE, M.E., Architect

Containing Benjamin, Count of Rumford's essay on "Proper Fireplace Construction." Nearly 200 illustrations, including the original Rumford drawings, diagrams for fireplace construction and numerous ancient and modern mantels. One 12mo volume; illuminated cover. Price, $2.00.

SEND FOR DESCRIPTIVE CATALOGUE, SAMPLE OF THE "ARCHITECTS' AND BUILDERS' MAGAZINE"

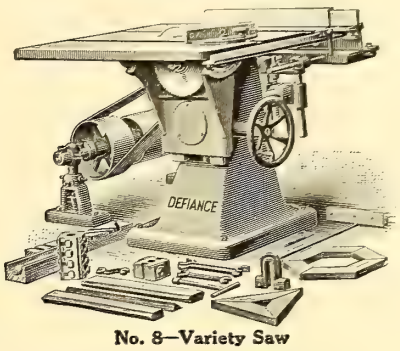
Published Monthly at $2.00 a Year and Circular of Students and Draftsmen Library Club

WILLIAM T. COMSTOCK, *Publisher*
23 WARREN STREET, NEW YORK

"DEFIANCE"
Wood-working Machinery

FOR MAKING
AUTOMOBILE WHEELS AND BODIES, WAGON AND CARRIAGE WHEELS, HUBS, SPOKES, WAGONS, RIMS, CARRIAGES, SHAFTS, POLES, NECK-YOKES, SINGLETREES, HOOPS, HANDLES, SPOOLS, BOBBINS, INSULATOR PINS, OVAL WOOD DISHES AND FOR GENERAL WOOD WORK.

Invented and Built By
THE DEFIANCE MACHINE WORKS
DEFIANCE, OHIO



No. 8—Variety Saw

Design No. 405—Book No. 3

ARE YOU A PROSPECTIVE
SPRING BUILDER?
You Need Our Books

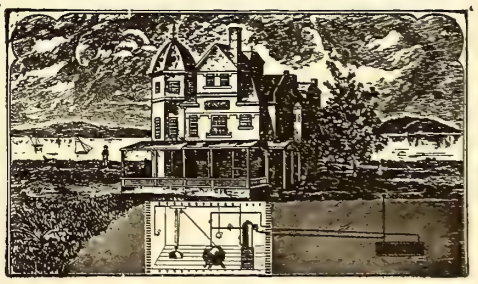
THEY'RE FILLED WITH PRACTICAL IDEAS AND MONEY-SAVING PLANS

No. 1. 25 Residences, cost $1,500 to $5,000 ..... $ .50
No. 2. 25 Residences, cost $5,000 to $20,000 ..... 1.00
No. 3. 25 Concrete Residences 1.00

Books Sent Prepaid on Receipt of Price

Arthur G. Lindley Co., Architects
SCHENECTADY, N. Y.

WE ENTER LARGE COMPETITIONS FOR ANY TYPE BUILDING



THE **most modern, and best illuminating and cooking** service for isolated homes and institutions, is furnished by the **CLIMAX GAS MACHINE.**

Apparatus furnished on **TRIAL** under a **guarantee to be satisfactory** and in advance of all other methods.

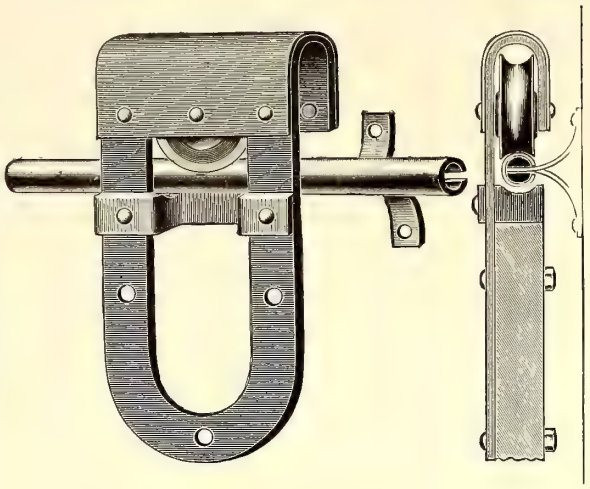
Cooks, heats water for bath and culinary purposes, heats individual rooms between seasons—drives pumping or power engine in most efficient and economical manner—also makes brilliant illumination. **IF MACHINE DOES NOT MEET YOUR EXPECTATIONS, FIRE IT BACK.**

Send for Catalogue and Proposition.

Low Price Better than City Gas or Electricity and at Less Cost.
Liberal Terms

C. M. KEMP MFG. CO.
405 to 413 E. Oliver Street, Baltimore, Md.

Lane Tubular Track and Hanger



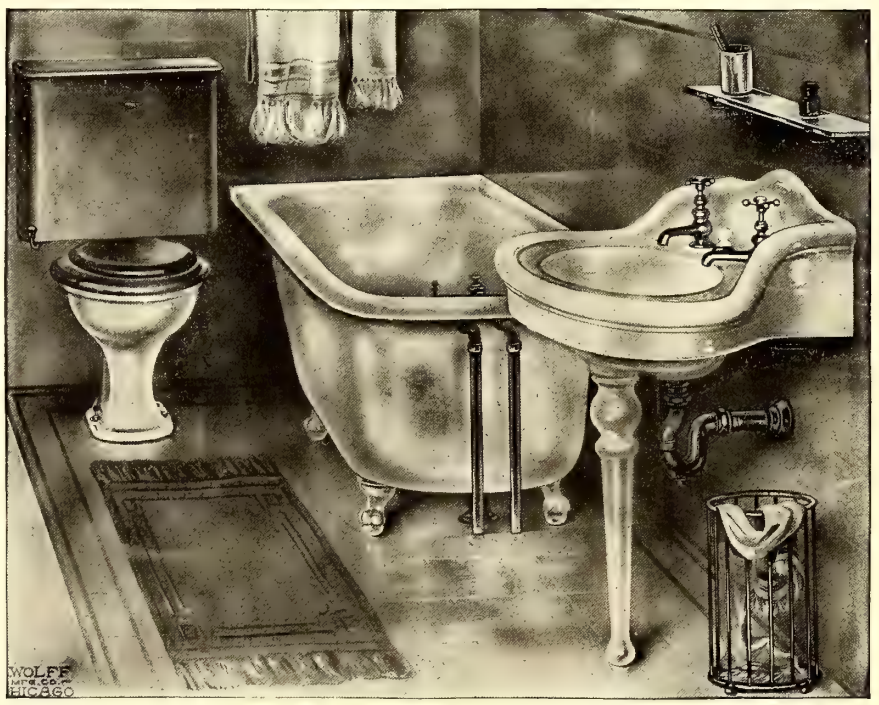
Is Our Latest Pattern

ALL STEEL RAIL AND HANGER FRAME

¶ The simplest and cheapest Hanger, that can't jump the track and allows the door to swing outward a considerable distance without cramping either Track or Hanger.

LANE BROS. CO.

434-466 PROSPECT STREET POUGHKEEPSIE, N. Y.



FIFTY-FOUR YEARS OF QUALITY

GUARANTEE LABELS

Guarantee labels on enameled ironware are various and are variously translated in practice.

Careful architects have come to understand that it is the spirit behind the guarantee that counts for most after all. The liberal, unquestioning, make-good policy behind every Wolff guarantee is responsible for unvarying Wolff specification as often as is the leadership of Wolff design.

L. WOLFF MANUFACTURING CO.

Established 1855

MANUFACTURERS OF PLUMBING GOODS EXCLUSIVELY

The only complete line made by any one firm

GENERAL OFFICES: 601 LAKE STREET
SHOWROOMS: 91 DEARBORN STREET } **CHICAGO**

DENVER **TRENTON**

BRANCH OFFICES

Minneapolis, Minn.: 615 Northwestern Building
Kansas City, Mo.: 1209 Scarrett Building
San Francisco, Cal.: Monadnock Building
Cleveland, Ohio: Builders' Exchange
Washington, D. C.: 327-328 Bond Building
Buffalo, N. Y.: 77 Richmond Avenue
Omaha, Neb.: 1108-12 Nicholas Street

GRAFTING FOR BOYS

By E. P. Powell

IT IS getting to be difficult, anywhere about the country, to secure the services of a competent grafter. Fifty years ago the Connecticut pioneers, moving westward, carried the art with them. It was very seldom that a New England boy of ten could not graft apple trees. Each family took from the old home lot a few scions of Spitzenburg and Swaar and Pound Sweet, so that in this way the choicest New England fruit was soon to be obtained all along the pioneering route through New York, Ohio and Michigan. I do not understand entirely why this has become a lost art, the art of putting the best fruit into seedling trees. It is very likely that it has come about from the fact that we can buy from nurserymen grafted trees. It is true, however, that our very best way to secure a good orchard is to grow seedlings, and graft them ourselves.

It is a simple affair, and our boys ought to be taught the art, together with a good deal more agricultural information and practise in our schools. We shall come to that after awhile, but for the present I urge upon every country dweller to have a little nursery for the raising of good stock. When the young apple trees have grown to about five feet, eliminate every scabby tree and those which show signs of lack of vitality, or ability to resist the frost. Selecting the best, teach your boys to insert the scions by cleft grafting. This kind of work interests the lads and makes home life a good deal more entertaining. After a little practise you will find a passion for collecting and preserving choice novelties in the fruit line that would otherwise be lost. These seedlings are making themselves useful in localities everywhere, and are appreciated by the neighborhood. Many of them ought to be multiplied and distributed to the people at large. When your children have learned this art, they can apply it to roses and shrubs quite as readily as to fruit. Budding is but little more difficult.

Grafting and budding are based on the fact that the cells of a scion will determine the character of a fruit on a grafted limb—that is for the most part. It is quite true, however, that the stock will also more or less modify the scion. Here comes in a nice problem for the young grafter, and he will soon be trying to improve sorts, and grow better kinds of apples and pears. Inarching is a form of grafting, where two plants stand near together, and you wish to multiply the one at the expense of the other. Draw over the limb that you wish to propagate, and where it touches the other stalk insert it in a clean cut that will just admit it. Tie the branch there firmly for a few weeks and you will find that a union has taken place. Skilful horticulturists practice over one hundred different ways of grafting and budding. Now what I am at is to encourage the boys and the girls also to practice this art, and to get so familiar with it that they will devise new methods themselves. It is also excellent discipline, because it requires exactness and precision of workmanship.

If this business of grafting is carried out scientifically and studiously it will constitute a good big chapter of education for the young fellow. Of course he understands very easily that his work is intended to propagate a variety that will not come true from seed. If he sows his pear seeds from a Sheldon, they will give him all sorts of new things; but if he inserts a scion of Sheldon in a wild stock he gets Sheldon. Only there is, every time, a little modification, and just how much modification he can make in the way of improvement is a problem for him. He knows that he can not graft apples into maples, or he ought to vgraft a plum into a peach, or a peach into a know it, but just how wide this possibility of uniting species goes he must find out. He can

graft a plum into a peach, or a peach into a plum, or into an apricot; but an apple graft will almost never unite with a pear stock, and if it does will not develop freely. Plants of different genera are not sure to unite, even in the same family. Here is a good big field for the boy to investigate. He will find his pears growing in quince bushes, but he will not find his apples growing in the same bushes. It is hard to tell why, because they are all in the Rosaceæ family. He has a lot more to learn along this line, and a good many problems that are not yet solved are open before him.

ON WATERPROOFING CONCRETE

ON ACCOUNT of the number of inquiries received from correspondents as to methods of waterproofing cement blocks or monolithic concrete, the *Scientific American* has been investigating what is being done in the way of improvement of existing methods.

The Concrete Association of America has conducted a valuable series of experiments and distributes its findings free of charge in a public-spirited manner, but the results obtained are largely negative.

Some preparations are found to be effective under certain conditions, but none hitherto has been found to be equally reliable with all mixtures and under all circumstances.

The need and requirements of external paint for concrete, if only to counteract the variable porosity which cannot be avoided unless the personal equation in concrete mixing is eliminated, is so well put in a paper read before the recent convention of the American Society for Testing Materials, by Mr. G. D. White, that we quote a part of it by permission:

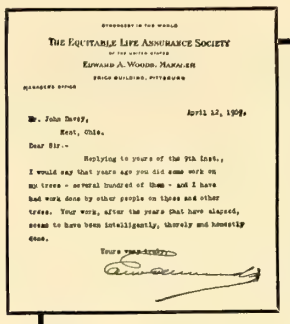
"Unless extreme care is exercised in the preparation, mixing, and workmanship of concrete for solid or reinforced work, which is not always commercially possible, the resultant concrete is not impermeable, or at least not uniformly impermeable to water or moisture. Where perfect materials have been used with perfect workmanship, we have another difficulty, another problem to solve. Concrete is a non-conductor of heat. It is, naturally, a cold-blooded animal. The difference in temperature between the concrete wall and the atmosphere (the warmer the day the greater the difference in temperature) causes a condensation of moisture on the surface. This is annoying, and a detriment to health in living and office rooms; a loss of room or loss by damage in storerooms and warehouses; an objection in any building, no matter what its nature or purpose.

"Hollow concrete blocks, tiles, brick, etc., have various defects. They are not only porous but capillary positive, and thus absorb moisture from 5 to 40 per cent. of their own weight. Due to rain and snow, walls built of these materials become water-soaked, and remain soaked for varying lengths of time. During certain seasons of the year, and especially in some sections of our country, they remain soaked for months.

"The fact that dry walls are essential to health and comfort is generally known, and so well appreciated that the question of dampness has been a restraining agent to a much larger and more extensive use of concrete by the building trades of this and other countries.

"The tendency to stain, the frequence of efflorescence, and difference in color due to difference in materials and to intermissions in concrete are defects of a less serious nature.

"A drawback that includes concrete in all forms is the uninviting, unattractive color. Replace our buildings of marble, of terra cotta, of granite, of wood handsomely decorated, with buildings of concrete, and note the contrast. The dirty gray of ordinary cement


THE EQUITABLE LIFE ASSURANCE SOCIETY
EDWARD A. WOODS, MANAGER
April 12, 1909.
Mr. John Davey,
Kent, Ohio.
Dear Sir:-
Replying to yours of the 9th inst.,
I would say that years ago you did some work on my trees - several hundred of them - and I have had work done by other people on these and other trees. Your work, after the years that have elapsed, seems to have been intelligently, thirely and honestly done.
Yours truly,

Intelligently, Thoroughly, Honestly Done

This testimony to the character of the work of the Davey tree experts is typical of the hundreds cheerfully given by patrons. The supreme test of any accomplishment is its endurance—its permanent benefits, as measured by the passing seasons. Note particularly that this typical expression as to the results of its practical application is the

Verdict on Davey Tree Surgery After the Test of Years

Compared with the partial success, often amounting to real failure, of the "tree doctors," so called, who have entered the work with so little appreciation of its significance or requirements. The completely efficient work of the Davey tree experts is not difficult to explain when the foundations of the Davey methods are clearly understood.

"Our Wounded Friends, the Trees"—

The Davey Book of Why and How tells in full the fascinating story of the glorious fruition of the life-work of John Davey,—too expensive for indiscriminate distribution, will be mailed free to any owner of trees who writes for it to **Desk 2**.

THE DAVEY TREE EXPERT COMPANY

(Operating Davey's School of Practical Forestry)

KENT, OHIO

JOHN DAVEY
Father of Tree Surgery

THE GARDEN LOVER'S GIFT

¶ THE GARDEN CALENDAR for 1910, by Ellen P. Williams, is *the* gift for every garden lover. Here alone can you get the information you wish about your roses, your shrubs, your annuals, your perennials, your trees, and everything in and about your lawn, just *when* you want it. That is the compelling feature of **THE GARDEN CALENDAR.** You get *what* you want, just *when* you want it. There isn't any searching through hidden volumes to learn how to make your peonies bloom, how to keep the rust from your roses, how to outwit nature even and make *everything* do its best. It's here in **THE GARDEN CALENDAR** on the very day when you need the advice. Order a copy to-day. To be had at the leading book and stationery stores; or *mailed by the publishers in a box, price postage paid $1.00.*

Full size 7¼x14 inches
Illustration by Emlen McConnell

ASK FOR A CIRCULAR OF ALL OUR CALENDARS
THE FRANKLIN PRINTING CO., 526 Ludlow St., Phila.

REFUSE RECEIVERS and GARBAGE RECEIVERS

Don't Be Knocked Over By Stenches from Backyard Débris

Why not look up the Stephenson Method? Seven years on the market, and if satisfied protect the health of your family by installing

THE STEPHENSON Underground Garbage Receiver

prevents the swill from **freezing**

THE STEPHENSON TRADE MARK

- Underfloor Refuse Receiver for ashes
- Underground Earth Closets for Camps
- Portable Metal Houses for Above
- Spiral Ribbed Ash Barrel, outwears two
- High-class Bathroom Accessories

SOLD DIRECT. Send for Circular on each

C. H. STEPHENSON, Mfg., 21 Farrar Street
Lynn, Massachusetts

WE MAKE THE PERMANENT KIND OF

RUSTIC WORK

that is thoroughly distinctive and which gives that artistic finish to the country place.

Rustic Tea Houses, Boat and Bath Houses, Arbors, Pergolas, Back Stops for Tennis Courts; Rustic Bridges for Ravines, Entrance Gates, Chairs, Tables, Flower Stands, etc., in fact, Rustic Work of every description.

Catalog and Sketches Sent upon Application

RUSTIC CONSTRUCTION WORKS, 33 Fulton Street, New York City

This Tea House on exhibition in our warerooms ready for immediate shipment

LOW-COST SUBURBAN HOMES

A Practical Guide for Prospective Home-Builders

This book contains 90 illustrations of plans and photographs of houses which have been successfully built at a cost ranging from $1,000 to $10,000, with descriptive articles and an estimate of the cost of most houses described. Only the newest and best have been selected. General views of exteriors, diagrams of interiors, interior decorations and furnishings, and full construction plans make up the illustrations.

Only Most Eminent Architects Are Contributors

If You're Planning to Build—If You Need Ideas on How to Improve Your Home
SEND FOR THIS BOOK. The Cost Is Nominal.

McBRIDE, WINSTON & CO., Dep't L, **6 WEST 29TH ST., NEW YORK**

Art Paper Cover,
Price, 25 cents postpaid

Art Vellum Cloth Cover,
Price, 50 cents postpaid

Cottage Designs

By far the most complete collection of plans ever brought out. Illustrated with full-page plates. One dollar each. Sold separately.

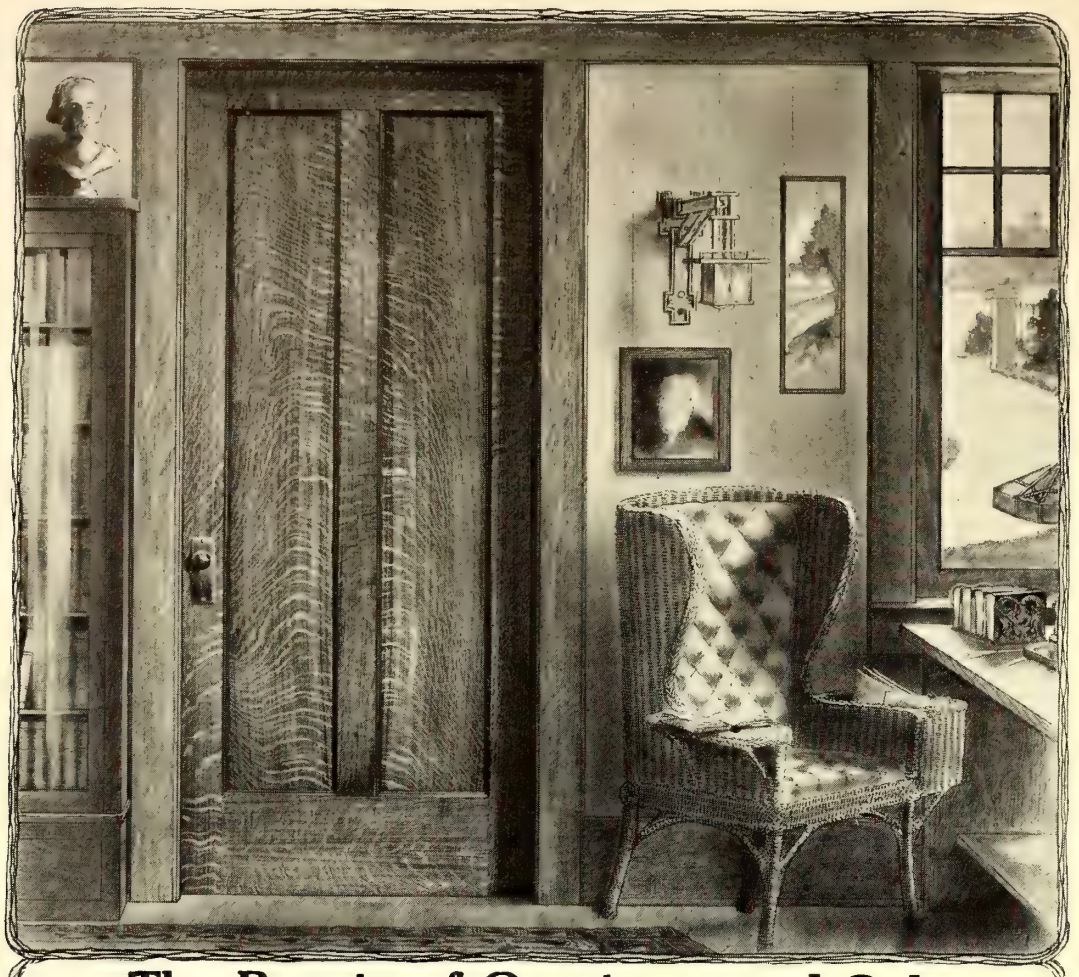
MUNN & CO., INC., 361 BROADWAY, NEW YORK

No. 1. COTTAGE DESIGNS
Twenty-five designs, ranging in cost from $600 to $1,500.

No. 2. LOW-COST HOUSES
Upward of twenty-five designs, costing from $1,000 to $3,000.

No. 3. MODERN DWELLINGS
Twenty designs, at costs ranging from $2,800 to $7,000.

No. 4. SUBURBAN HOMES
Twenty selected designs, costing from about $3,000 upward.



The Beauty of Quarter-sawed Oak

is brought out to perfection by our process of making veneers and by the careful attention given to the finish of each and every door.

Cross section showing construction of 1⅜ inch door.

The name "*Morgan*" is branded on each door.

are perfect doors. Built of several layers with grain running crosswise, pressed together with waterproof glue, making shrinking, warping or swelling impossible. Veneered in all varieties of hardwood—birch, plain or quarter-sawed red or white oak, brown ash, mahogany, etc.

Morgan Doors are light, remarkably strong and absolutely perfect in every detail of construction. Each **Morgan Door** is stamped "*Morgan*" which guarantees quality, style, durability and satisfaction.

In our new book, "The Door Beautiful," **Morgan Doors** are shown in their natural color and in all styles of architecture—Colonial, Empire, Mission, etc., and it is explained why they are the best and cheapest doors for permanent satisfaction in any building. ***A copy will be sent on request.***

Architects: Descriptive details of Morgan Doors may be found in Sweet's index, pages 678 and 679.

Morgan Company, Dept. A, Oshkosh, Wisconsin.

Morgan Company, Oshkosh, Wisconsin. Morgan Sash and Door Company, Chicago, Ill. Morgan Company, Baltimore, Maryland.

CEMENT

Its Chemistry, Manufacture & Use

Scientific American Supplement 1372 contains an article by A. D. Elbers on tests and constitution of Portland cement.

Scientific American Supplement 1396 discusses the testing of cement.

Scientific American Supplement 1325 contains an article by Prof William K. Hatt giving an historical sketch of slag cement.

Scientific American Supplements 955 and 1042 give good accounts of cement testing and composition, by the well-known authority, Spencer B. Newberry.

Scientific American Supplements 1510 and 1511 present a discussion by Clifford Richardson on the constitution of Portland cement from a physico-chemical standpoint.

Scientific American Supplement 1491 gives some fallacies of tests ordinarily applied to Portland cement.

Scientific American Supplements 1465 and 1466 publish an exhaustive illustrated account of the Edison Portland cement works, describing the machinery used.

Scientific American Supplement 1519 contains an essay by R. C. Carpenter on experiments with materials which retard the activity of Portland cement.

Scientific American Supplement 1561 presents an excellent review by Brysson Cunningham of mortars and cements.

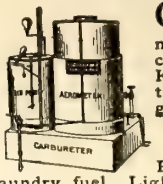
Scientific American Supplement 1533 contains a resumé of the cement industry and gives some valuable formulae.

Scientific American Supplement 1575 discusses the manufacture of hydraulic cement. L. L. Stone is the author.

Scientific American Supplements 1587 and 1588 contain an able paper by Edwin C. Eckel on cement material and industry of the U. S.

Any one of these Supplements will be sent for 10 cents. The entire set costs $1.60, and constitutes an invaluable text book on the subject. Order from your Newsdealer or from

MUNN & COMPANY, Inc., 361 Broadway, New York



Country Homes

may enjoy city comforts and conveniences *at less cost* than Kerosene, Acetylene or Electricity, with none of their dangers, by using the ***Automatic***

Economy Gas Machine

Produces light, kitchen and laundry fuel. Lighted the same as electric, but without batteries. Write for booklet, ***"The Economy Way."***

ECONOMY GAS MACHINE CO., Sole Mfrs.,
437 Main Street Rochester, N. Y.

FINE HARDWOOD FLOORS

Most economical, healthful and satisfactory—for old or new houses, different patterns to match furnishings. Outwear carpets. Stocks carried in the leading cities. PLAIN OR ORNAMENTAL. THICK OR THIN.

Write for PATTERN CATALOGUE

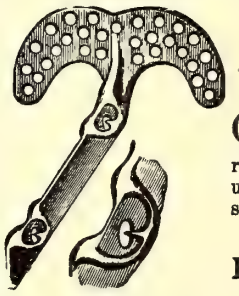
THE INTERIOR HARDWOOD CO. MFR'S INDIANAPOLIS

Shetland Ponies

An unceasing source of pleasure and robust health to children. Make an ideal Christmas gift. Safe. Inexpensive to keep. Highest type. Many champions. Stallions and mares for breeding. Complete outfits. Our beautifully illustrated free catalogue tells all about them

BELLE MEADE FARM
Dept. W. Markham, Va.

STANDING SEAM ROOF IRONS

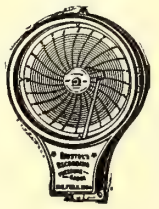


PATENTED

CLINCH right through the standing seam of metal roofs. No rails are needed unless desired. We make a similar one for slate roofs.

Send for Circular

Berger Bros. Co.
PHILADELPHIA



BRISTOL'S RECORDING THERMOMETERS

make continuous records of atmospheric temperatures, and are designed for both indoor and outdoor temperatures. Send for new catalogues.

THE BRISTOL COMPANY, WATERBURY, CONN.
NEW YORK *Branches* CHICAGO

Which Price Do You Pay? $15 or $7.50?

This Morris Chair in Quartered White Oak costs you the high price at any store — you save half or more buying direct from our factory "in sections" ready to fasten and stain. Choice of seven finishes.

"COME-PACKT" SECTIONAL FURNITURE

Over One Hundred other handsome pieces in our new catalogue Write for it to-day. *Formerly International Mfg. Co.*
COME-PACKT FURNITURE CO., 1239 Edwin St., Ann Arbor, Mich.

Cattle Manure in Bags Shredded or Pulverized

Best and safest manure for florists and greenhouse use, absolutely pure, no waste, no danger. Write for circular and prices.

The Pulverized Manure Co.
21 Union Stock Yards, Chicago.

The Scientific American Boy

By A. RUSSELL BOND. 320 pages, 340 illus. $2.00 postpaid

A STORY OF OUTDOOR BOY LIFE

Suggests a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. Complete practical instructions are given for building the various articles, such as scows, canoes, windmills, water wheels, etc.

MUNN & CO., Inc., Publishers 361 Broadway, New York

or concrete becomes monotonous to the observer even where there is but a sprinkling of concrete among buildings of more pleasing construction.

"If to the strength, cheapness, durability, and fire-resisting properties of concrete can be added impermeability to moisture and decoration, we will have a building material as nearly perfect as the world has ever seen, and this within the means of every builder.

"In recognition of this fact, various concerns and individuals have placed on the market and recommend as a solution to the problem, various treatments and coatings.

"For the sake of convenience, I will divide these into four classes. In my investigation of the various treatments and materials included in these classes, I have endeavored to be unprejudiced, and to give to each its true worth and full value.

"I. Waterproofing Compounds in Liquid or Powdered Form, Mixed with the Concrete in Its Preparation.

"This is a help in that it lessens and retards, in a measure, the moisture-absorbing tendency of concrete. It fails in the desired attainment for the following reasons:

"Improper distribution, which is difficult of regulation.

"When properly distributed, it does not render concrete entirely impervious to moisture.

"It has a tendency to weaken the tensile strength of concrete.

"It does not decorate.

"The increase in value is not proportionate with the increase in cost.

"It deteriorates with age, that is, a concrete block containing the waterproofing compound, on the first application of water will absorb certain varying quantities. On subsequent applications, allowing the block to dry in each instance, larger quantities are absorbed.

"II. Treatments Preparatory to the Use of Linseed-oil Paints.

"Treatments in various forms have been advanced and recommended by some of our leading master painters, and endorsed by most able research chemists. For the sake of brevity, I have included in my paper but three of these treatments: (*a*) Hydrochloric or muriatic-acid wash; (*b*) a wash consisting of a solution of zinc sulphate and water; (*c*) a wash consisting of ammonium carbonate and water.

"From a chemical standpoint, muriatic acid, no matter in what strength, nor what the character of the concrete, is not only useless as a remedy, but detrimental in its action. Master painters who have endeavored to put it in practice have discovered to their sorrow a confirmation or a demonstration of the chemical theory.

"Theory favors and practical tests confirm as the best adapted to the purpose, the former of the two latter methods."

The author proceeds to give the chemical reactions of these various washes with the concrete ingredients, and shows in a convincing manner the reasons why they fail in their desired object. He adds:

"The treatment with zinc sulphate or ammonium carbonate, even though successful, does not offer a solution to the problem, because a linseed-oil paint is unsuited for either exterior or interior painting of concrete. The gloss robs the surface of the appearance of stone or masonry. Linseed oil has water-absorbing and lacks water-resisting properties. It can not be applied over a damp or wet surface, which means that following a rainstorm or rainy season, a painter must wait weeks and perhaps months before he can commence work on or complete a contract already begun.

"III. Colorless Liquid Coatings.

"Certain of these may be of some value or service in retarding moisture absorption and efflorescence, but they are all alike found lacking in the following respects:

We borrowed this dance
From the days of the past
And the wonder grows as
we dance it—
How they kept up the pace
And the strength of the race
without

Uneeda Biscuit

The Soda Cracker that makes the Nation strong.

NATIONAL BISCUIT COMPANY

Complimentary Portfolio of Color Plates

Notable Examples of

INEXPENSIVE DECORATION AND FURNISHING

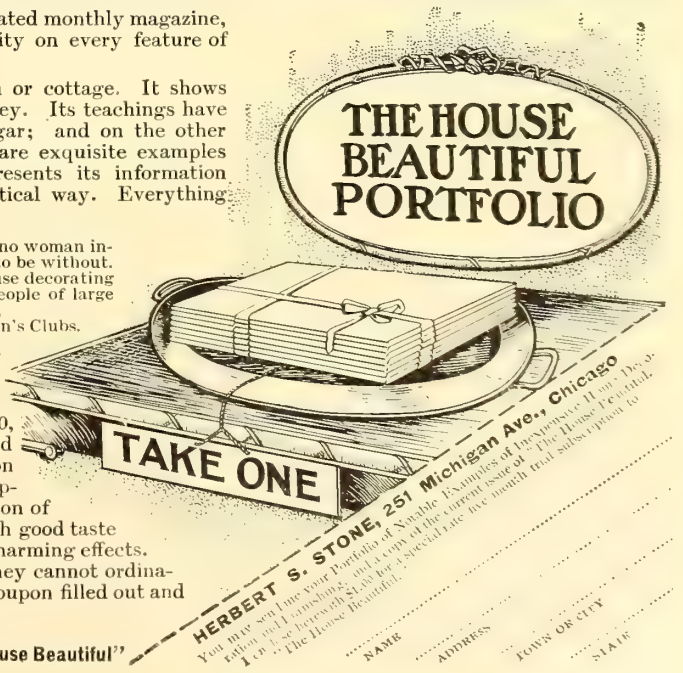
"The House Beautiful" is an illustrated monthly magazine, which gives you the world's best authority on every feature of making the home beautiful.

It is invaluable for either mansion or cottage. It shows you wherein taste goes farther than money. Its teachings have saved costly furnishings from being vulgar; and on the other hand, thousands of inexpensive houses are exquisite examples of superb taste from its advice. It presents its information interestingly and in a very plain, practical way. Everything is illustrated.

The House Beautiful is a magazine which no woman interested in the beauty of her home can afford to be without. It is full of suggestions for house building, house decorating and furnishing, and is equally valuable for people of large or small income. ELLEN M. HENROTIN,
Ex. Pres. Nat. Federation of Women's Clubs.

Its readers all say it is a work remarkably worthy, thorough and useful. The magazine costs $2.50 a year.

But to have you test its value for $1.00, we will send you the current number and The House Beautiful Portfolio gratis, on receipt of the Five Months' Trial Subscription Coupon. The Portfolio is a collection of color plates and others of rooms in which good taste rather than lavish outlay has produced charming effects. The portfolio alone is a prize which money cannot ordinarily purchase. Enclose $1.00 with the coupon filled out and send to Dept. 249.



HERBERT S. STONE, Publisher of "The House Beautiful"

Frank Cotter, Architect

The Charm of a Country Home

depends a great deal on the relation of the house and the grounds to the landscape.

To give this quality stone has been used, but there is a material more easily worked than stone and cheaper, which has the same character, and that material is concrete.

The most popular building material today for the country place is concrete. It is brought to the grounds in the shape of sand, gravel, cement and water, and manufactured on the spot into stone, producing a house all in one piece.

Such a house cannot burn, is cool in summer, warm in winter, permanent, lasting and durable, and in the hands of the right architect has a charm of form in the contrast of the cement with the green foliage, which cannot be equaled by any other material.

To insure success, however, be sure that the cement used is Atlas Portland Cement. This is the name of a brand which has quality and, therefore, gives quality in construction.

Good concrete was never made with poor cement. Poor concrete was never made with Atlas Cement. Standard, uniform, pure are the qualities of

ATLAS PORTLAND CEMENT

which is made in the plants having the largest output in the world, and which supply the cement for use on the Panama Canal.

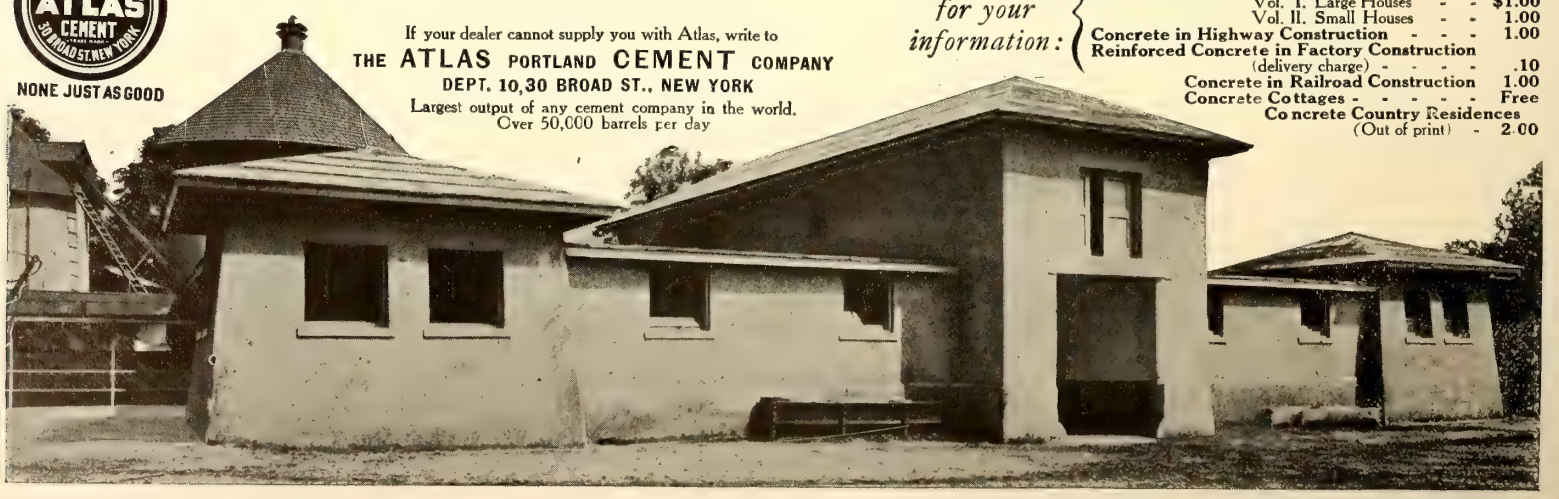
Some books for your information:

Concrete Construction about the Home and on the Farm	Free
Concrete Houses and Cottages	
Vol. I. Large Houses	$1.00
Vol. II. Small Houses	1.00
Concrete in Highway Construction	1.00
Reinforced Concrete in Factory Construction (delivery charge)	.10
Concrete in Railroad Construction	1.00
Concrete Cottages	Free
Concrete Country Residences (Out of print)	2.00

THE ATLAS PORTLAND CEMENT COMPANY
30 BROAD ST. NEW YORK
PORTLAND ATLAS CEMENT

NONE JUST AS GOOD

If your dealer cannot supply you with Atlas, write to
THE ATLAS PORTLAND CEMENT COMPANY
DEPT. 10,30 BROAD ST., NEW YORK
Largest output of any cement company in the world.
Over 50,000 barrels per day



JUST PUBLISHED

Three New Instructive Books

SUITABLE FOR HOLIDAY GIFTS

Concrete Pottery and Garden Furniture

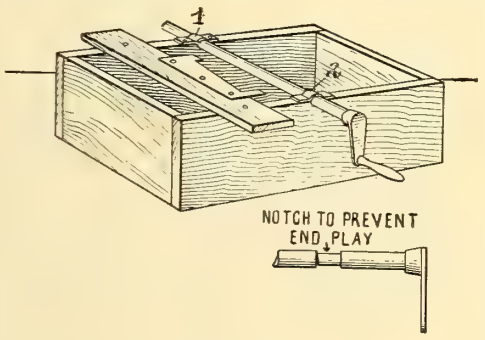
BY RALPH C. DAVISON

12mo, 5¼ x 7½ inches, 196 pages, 140 illustrations. Price, **$1.50** Postpaid

A most attractive book. The only work issued on the subject

THIS work should appeal strongly to all those interested in ornamental concrete, as the author has taken up and explained in detail in a most practical manner the various methods of casting concrete in ornamental shapes. The titles of the thirteen chapters which this book contains will give a general idea of the broad character of the work. They are entitled:

I., Making Wire Forms and Frames; II., Covering the Wire Frames and Modeling the Cement Mortar into Form; III., Plaster Molds for Simple Forms; IV., Plaster Molds for Objects Having Curved Outlines; V., Combination of Casting and Modeling—An Egyptian Vase; VI., Glue Molds; VII., Colored Cements and Methods Used for Producing Designs with Same; VIII., Selection of Aggregates; IX., Wooden Molds—Ornamental Flower Pots Modeled by Hand and Inlaid with Colored Tile; X., Concrete Pedestals; XI., Concrete Benches; XII., Concrete Fences; XIII., Miscellaneous, Including Tools, Waterproofing and Reinforcing.



The first two chapters explain a most unique and original method of working pottery which has been developed by the author. The chapter on color work alone is worth many times the cost of the book, inasmuch as there is little known on this subject, and there is a large and growing demand for this class of work. The author has taken for granted that the reader knows nothing whatever about the material and has explained each progressive step in the various operations throughout in detail. These directions have been supplemented with half-tones and line illustrations which are so clear that no one can misunderstand them. The amateur craftsman who has been working in clay will especially appreciate the adaptability of concrete for pottery work, inasmuch as it is a cold process throughout, thus doing away with the necessity of kiln firing, which is necessary with the former material. The book is well gotten up, and is printed on heavy glazed paper and abounds in handsome illustrations throughout, which clearly show the unlimited possibilities of ornamentation in concrete.

Handy Man's Workshop and Laboratory

Compiled and Edited by **A. RUSSELL BOND**

12mo, 6 x 8¼ inches, 467 pages, 370 illustrations
Price, **$2.00** Postpaid

A Collection of Ideas and Suggestions for the Practical Man

EVERY practical mechanic, whether amateur or professional, has been confronted many times with unexpected situations calling for the exercise of considerable ingenuity. The resourceful man who has met an issue of this sort successfully seldom, if ever, is adverse to making public his methods of procedure. After all, he has little to gain by keeping the matter to himself and, appreciating the advice of other practical men in the same line of work, he is only too glad to contribute his own suggestions to the general fund of information.

About a year ago it was decided to open a department in the *Scientific American* devoted to the interests of the handy man. There was an almost immediate response. Hundreds of valuable suggestions poured in from every part of this country and from abroad as well. Not only amateur mechanics, but professional men, as well, were eager to recount their experiences in emergencies and offer useful bits of information, ingenious ideas, wrinkles or "kinks" as they are called. Aside from these, many valuable contributions came from men in other walks of life—resourceful men, who showed their aptness at doing things about the house, in the garden, on the farm. The electrician and the man in the physics and chemical laboratory furnished another tributary to the flood of ideas. Automobiles, motor cycles, motor boats and the like frequently call for a display of ingenuity among a class of men who otherwise would never touch a tool. These also contributed a large share of suggestions that poured in upon us. It was apparent from the outset that the Handy Man's Workshop Department in the *Scientific American* would be utterly inadequate for so large a volume of material; but rather than reject any really useful ideas for lack of space, we have collected the worthier suggestions, which we present in the present volume. They have all been classified and arranged in nine chapters, under the following headings:

I., Fitting up a Workshop; II., Shop Kinks; III., The Soldering of Metals and the Preparation of Solders and Soldering Agents; IV., The Handy Man in the Factory; V., The Handy Man's Experimental Laboratory; VI., The Handy Man's Electrical Laboratory; VII., The Handy Man about the House; VIII., The Handy Sportsman; IX., Model Toy Flying Machines.

The Scientific American Boy at School

By A. RUSSELL BOND

12mo, 6 x 8¼ inches, 338 pages, 314 illustrations.
Price, **$2.00** Postpaid

An Ideal Book for Boys and Particularly so for the Holidays

THIS book is a sequel to "The Scientific American Boy," many thousand copies of which have been sold, and has proven very popular with the boys. The main object of the book is to instruct how to build various devices and apparatus, particularly for outdoor use. The construction of the apparatus which is fully within the scope of the average boy, is fully described and the instructions are interwoven in a story, a feature which has assisted in making "The Scientific American Boy" so popular and interesting to the boy.

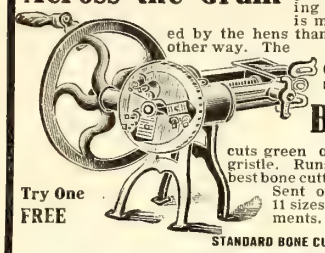
It takes up the story of "Bill" and several of his companions at boarding school. They form a mysterious Egyptian society, whose object is to emulate the resourcefulness of the ancients. Their Chief Astrologer and Priest of the Sacred Scarabeus is gifted with unusual powers, but his magic is explained so that others can copy it. Under the directions of the Chief Engineer, dams, bridges and canal-locks are constructed. The Chief Admiral and Naval Constructor builds many types of boats, some of which are entirely new. The Chief Craftsman and the Chief Artist also have their parts in the work done by the Society, over which Pharaoh and his Grand Vizier have charge. Following is a list of the chapters:

Chapter I., Initiation; Chapter II., Building a Dam; Chapter III., The Skiff; Chapter IV., The Lake House; Chapter V., A Midnight Surprise; Chapter VI., The Modern Order of Ancient Engineers; Chapter VII., A "Pedal Paddle-Boat"; Chapter VIII., Surveying; Chapter IX., Sounding the Lake; Chapter X., Signaling Systems; Chapter XI., The Howe Truss Bridge; Chapter XII., The Seismograph; Chapter XIII., The Canal Lock; Chapter XIV., Hunting with a Camera; Chapter XV., The Gliding Machine; Chapter XVI., Camping Ideas; Chapter XVII., The Haunted House; Chapter XVIII., Sun-Dials and Clepsydras; Chapter XIX., The Fish-tail Boat; Chapter XX., Kite Photography; Chapter XXI., Water-Kites and Current Sailing; Chapter XXII., The Wooden Canoe; Chapter XXIII., The Bicycle Sled; Chapter XXIV., Magic; Chapter XXV., The Sailboat; Chapter XXVI., Water Sports, and Chapter XXVII., Geyser Fountain.

MUNN & COMPANY, Inc., Publishers, 361 Broadway, New York

The Only Cutter That Cuts Bone Across the Grain

Every poultryman knows that feeding cut green bone is the only certain method of getting lots of eggs. It has been *proved* that bone cut *across the grain* has far greater feeding value. It is finer and is more readily assimilated by the hens than bone prepared any other way. The



STANDARD Bone Cutter

cuts green or dry bone, meat or gristle. Runs easily. Guaranteed best bone cutter or money refunded. Sent on 10 days' free trial. 11 sizes. Many new improvements. Write for catalogue.

Try One FREE

STANDARD BONE CUTTER CO., MILFORD, MASS.

Van Dorn Iron Works Co.

PRISON, HOUSE & STABLE WORK

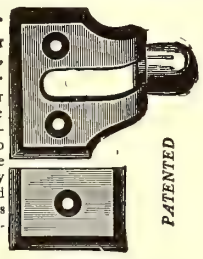
JOIST HANGERS
LAWN FURNITURE
FENCING, ETC.

CLEVELAND, OHIO

SPECIAL OFFER to Carpenters

BUILDERS AND OWNERS OF HOMES

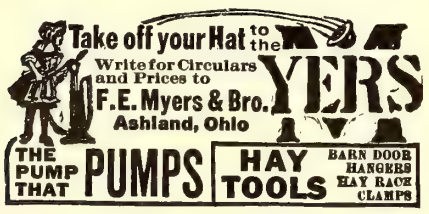
IVES PATENT WINDOW VENTILATING LOCK. A Safeguard for Ventilating Rooms. Pure Air, Good Health and Rest Assured.



PATENTED

To introduce this article, Four Ventilating Locks in Genuine Bronze, Brass or Antique Copper Finish will be mailed to any address prepaid for One Dollar. Will include a forty page Hardware Catalogue and Working Model to carpenters who wish the agency to canvass for its sale. Address

The H. B. Ives Co. NEW HAVEN, Conn., U.S.A.



Sheep Manure

Kiln dried and pulverized. No weeds or bad odors. Helps nature hustle For garden, lawn, trees, shrubs, fruits and house plants.

$4.00 LARGE BARREL, Cash with Order. Delivered to your Freight Station.

Apply now.

The Pulverized Manure Co., 21 Union Stock Yards, Chicago.

EUGENE PITOU, JR.

CIVIL ENGINEER AND LANDSCAPE ARCHITECT

Designs and Estimates for Improving and Constructing the Grounds of City and Suburban Properties.

Ornamental Fixtures Furnished

229 BROADWAY NEW YORK

Telephone, 6084 Barclay

"BEAUTIFYING HOME SURROUNDINGS"

tells the best, most practical way to plant for immediate effect. Shows how to improve YOUR property FREE. Write to-day.

LOVETT Landscape Service, Box 128 LITTLE SILVER, N. J.

To secure the richest and most durable effects in wood-finishing use JOHNSON'S ARTISTIC WOOD FINISHES JOHNSON'S

Send for Free Booklet, edition AH-12

S. C. JOHNSON & SON, *"The Wood-Finishing Authorities"* RACINE, WIS.

BURLINGTON Venetian and Sliding BLINDS

Venetian Blind for inside window and outdoor veranda. Any wood; any finish to match trim.

SCREENS AND SCREEN DOORS

¶ Equal 500 miles northward. Perfect privacy with doors and windows open. Darkness and breezes in sleeping rooms.

Sliding Blinds for inside use. Require no pockets. Any wood; any finish.

WRITE FOR OUR CATALOGUE, PRICE-LIST AND PROPOSITION TO YOU

BURLINGTON VENETIAN BLIND CO., 339 Lake St., Burlington, Vermont

THE WEALTH Patents Patents OF NATIONS

A

PATENT GIVES you an exclusive right to your invention for a term of seventeen years. You can sell, lease, mortgage it, assign portions of it, and grant licenses to manufacture under it. Our Patent system is responsible for much of our industrial progress and our success in competing in the markets of the world. The value of a successful Patent is in no degree commensurate with the almost nominal cost of obtaining it. In order to obtain a Patent it is necessary to employ a Patent Attorney to prepare the specifications and draw the claims. This is a special branch of the legal profession which can only be conducted successfully by experts. For nearly sixty years we have acted as solicitors for thousands of clients in all parts of the world. Our vast experience enables us to prepare and prosecute Patent cases and Trade Marks at a minimum of expense. Our work is of one quality and the rates are the same to rich and poor. Our unbiased opinion freely given. We are happy to consult with you in person or by letter as to the probable patentability of your invention.

Hand Book on Patents, Trade Marks, etc., Sent Free on Application

MUNN & COMPANY Solicitors of Patents

Branch Office
625 F Street, Washington, D. C.

Main Office
361 BROADWAY, NEW YORK

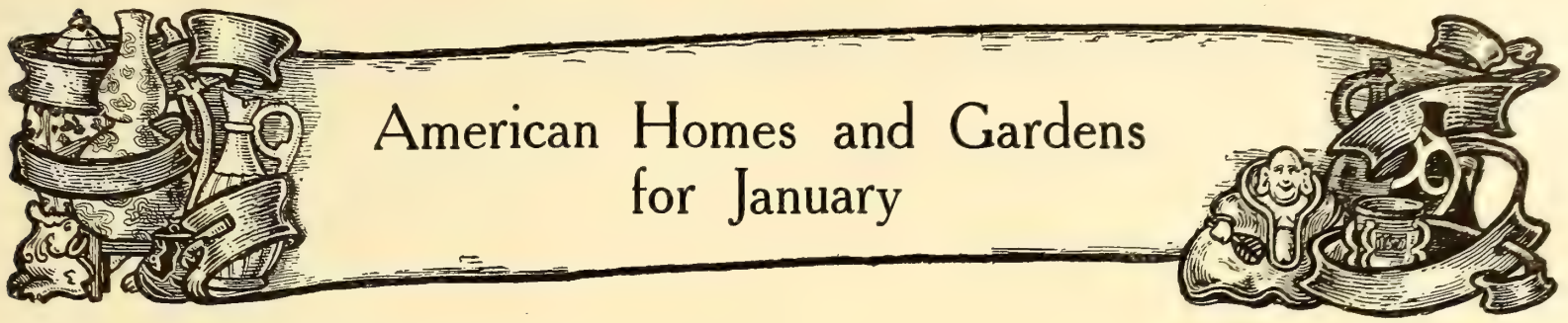
The SCIENTIFIC AMERICAN BOY

By A. RUSSELL BOND

12mo. 320 Pages. 340 Illustrations. Price, $2.00, Postpaid.

A STORY OF OUTDOOR BOY LIFE, suggesting a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. Complete practical instructions are given for building the various articles. The book contains a large number of miscellaneous devices, such as scows, canoes, windmills, water wheels, etc.

MUNN & CO., Inc. Publishers of "SCIENTIFIC AMERICAN" 361 Broadway, New York



American Homes and Gardens for January

A New Volume

A new volume—the fifth—of AMERICAN HOMES AND GARDENS begins with the number for January, 1910; a new volume filled with new houses and new ideas; a new volume of helpfulness to our readers, and, we trust, of renewed co-operation with our friends. Many notable plans are under way to make the new volume of even greater practical helpfulness than any preceding volume has been. There are twelve monthly issues in each volume; you will want every one of these.

A Colonial House

The residence of L. F. Rhoades at Nutley, N. J., is adequately described by Robert Prescott. It is an interesting house of unusual merit and is fully described and illustrated in every part.

A House in Illinois

Henry Hawley describes the highly interesting residence of Henry W. Schultz at Kenilworth, Ill. The architect was George W. Maher, who has done much valuable and original work in the West. Photographs and plans give a thoroughly complete presentation of this interesting house.

Furnishing the Flat

Lillian Hamilton French begins a brief series of helpful papers on furnishing the flat, with a study of the hall. Miss French has had wide experience in this kind of work, and her series, which will be continued through several successive numbers, is bound to attract wide attention. Nothing if not practical, Miss French is thorough mistress of the art of household arrangement. Her articles are stimulating and suggestive in a very high degree and will be copiously illustrated.

A Prize Garden

The garden awarded the second prize in the Garden Competition, recently conducted by AMERICAN HOMES AND GARDENS, is one of the special features of the number. The garden is one designed and planted by Charles D. Davies at his home in Englewood, N. J. It is a quiet homelike garden of unpretending beauty, and should be especially attractive to the owners of small places. A plan, giving the details of the planting as well as numerous photographs, accompany the description prepared by Mr. Davies.

A Tuxedo Home

The very lovely home of the Rev. Canon George William Douglass, D.D., at Tuxedo, New York, is the subject of the opening article. This house, which has long been considered one of the finest and most stately homes of Tuxedo, has never before been illustrated and described. The magazine has been fortunate to obtain exclusive photographs of this charming mountain home, which Barr Ferree has described in a thoroughly competent article. It is a house well worth gaining the intimate acquaintance with which these photographs and Mr. Ferree's article give to the reader.

Some Eastern Houses

Francis Durando Nichols, whose work is well known to the readers of the Magazine, contributes a useful paper on some recent dwellings in the Eastern United States erected at moderate cost. They are houses of interest, too, and dwellings well worth knowing about. The article is abundantly illustrated with exteriors, interiors and plans, and is a very complete review of an interesting group of low-priced houses.

Marine Mosaic

Marine mosaic is the art of creating decorative pictures with sea-shells and pebbles. It is an interesting and fascinating handicraft, the processes of which are not well known. W. Cole Brigham writes interestingly on this subject, tells what marine mosaic is, and shows some fine photographs of beautiful results. The article opens up a new chapter in domestic art.

Flowers All the Year Round

Not every one can have fresh flowers all the year round, but S. Leonard Bastin undertakes to describe a process whereby this delightful result may be accomplished with comparative ease. It is a simple matter; easy to do and recommended as highly successful when carried out. There is no secret about it—read the article and find out how it is done.

Damaskeening, Inlaying and Blending Metals

A new process for damaskeening, inlaying and blending metals is described by Amos Bradley Simpson, and will be found of great interest to lovers of metal work. The technical processes are described, as well as the results arrived at. The illustrations are of unusual beauty and interest.

Holiday Suggestions in Useful Books

MAGIC
STAGE ILLUSIONS AND SCIENTIFIC DIVERSIONS, INCLUDING TRICK PHOTOGRAPHY

Compiled and Edited by ALBERT A. HOPKINS

With an Introduction by Henry Ridgely Evans

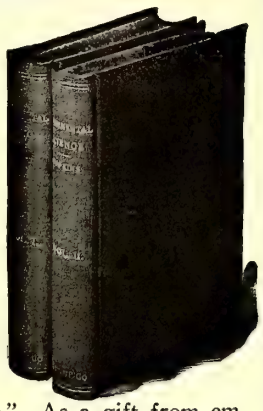
8vo. 568 Pages. 420 Illustrations. Price, $2.50, Postpaid

THIS unique work appeals to the professional and amateur alike and will prove a welcome addition to any library. It is the acknowledged standard work on magic. The illusions are illustrated by the highest class of engravings, and are all explained in detail, showing exactly how the tricks are performed. Great attention is paid to the exposes of large and important illusions, in many cases furnished by the prestidigitateurs themselves. Conjuring is not neglected, a selection of some of the best known of these tricks having been made. The work cannot fail to be of interest to young and old, and there is hardly anyone who is in anyway interested in either science or magic to whom it will not appeal. It is beautifully printed and attractively bound. An illustrated circular and table of contents will be sent on application.

EXPERIMENTAL SCIENCE

By GEORGE M. HOPKINS

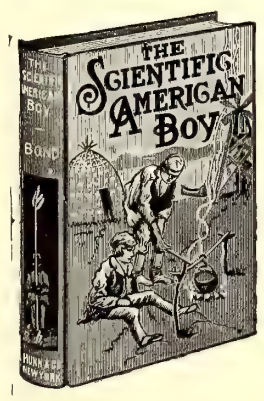
Twenty-fifth Edition, Revised and Greatly Enlarged
1,100 Pages, over 900 Illustrations
Two Octavo Volumes; Price in Cloth, $5.00; Half Morocco, $7.00, Postpaid



THIS book treats on the various topics of physics in a popular and practical way. It describes the apparatus in detail, and explains the experiments in full, so that teachers, students and others interested in physics may readily make the apparatus without expense, and perform the experiments without difficulty. The aim of the writer has been to render physical experimentation so simple and attractive as to induce both old and young to engage in it for pleasure and profit. All intelligent persons should have at least an elementary knowledge of physics to enable them to understand and appreciate what is going on in the world. This can be acquired by reading "Experimental Science." As a gift from employer to employee, from parent to child, from student to teacher, nothing could be more appropriate or acceptable. It is the most thoroughly illustrated work ever published on Experimental Physics, and its unprecedented sale shows conclusively that it is the book of the age for teachers, students, experimenters, and all others who desire a general knowledge of Physics or Natural Philosophy. Illustrated and descriptive circular on application.

The Scientific American Boy

By A. RUSSELL BOND

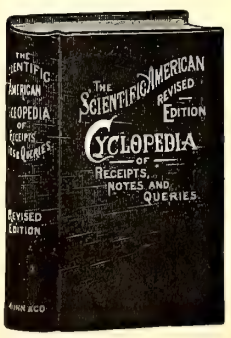


12mo. 320 Pages. 340 Illustrations. Price, $2.00, Postpaid.

THIS is a story of outdoor boy life, suggesting a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. In each instance complete practical instructions are given for building the various articles. The needs of the boy camper are supplied by the directions for making tramping outfits, sleeping-bags and tents, also such other shelters as tree houses, straw huts, log cabins and caves. The winter diversions include instructions for making six kinds of skate sails and eight kinds of snow-shoes and skis, besides ice-boats, scooters, sledges, toboggans and a peculiar Swedish contrivance called a "rennwolf." Among the more instructive subjects covered are surveying, wigwagging, heliographing and bridge-building, in which six different kinds of bridges, including a simple cantilever bridge, are described.

The Scientific American Cyclopedia of Receipts, Notes and Queries

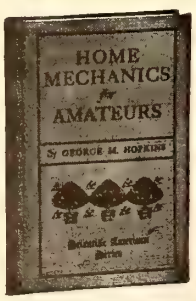
In Three Bindings. Price, Cloth, $5; Sheep, $6; Half Morocco, $6.50, Postpaid.



THIS is a careful compilation of the most useful receipts which have appeared in the *Scientific American* for more than half a century. Over 15,000 selected formulas are here collected, nearly every branch of the useful arts being represented. It is the most complete volume on the subject of receipts ever published. It has been used by chemists, technologists and those unfamiliar with the arts with equal success, and has demonstrated that it is a book which is useful in the laboratory, factory or home. An alphabetical arrangement, with abundant cross-references, makes it an easy work to consult. The Appendix contains the very latest formulas as well as 41 tables of weights and measures and a dictionary of chemical synonyms. A full table of contents will be sent on application.

Home Mechanics for Amateurs

By GEORGE M. HOPKINS, Author of "Experimental Science"



12mo, 370 Pages, 320 Illustrations. Price, $1.50, Postpaid.

THE book deals with wood-working, household ornaments, metal-working, lathe work, metal spinning, silver working; making model engines, boilers and water motors; making telescopes, microscopes and meteorological instruments, electrical chimes, cabinets, bells, night lights, dynamos and motors, electric light, and an electrical furnace. A thoroughly practical book by the most noted amateur experimenter in America. For the boy and the more mature amateur. Holidays and evenings can be profitably occupied by making useful articles for the home or in building small engines or motors or scientific instruments. Table of contents furnished on application.

MUNN & CO. Inc., Publishers, 361 BROADWAY, NEW YORK

"They serve to emphasize any defects in, or difference in color of, concrete construction.

"They impart to concrete a soggy, water-soaked appearance.

"They do not render impermeable to moisture for any length of time.

"They do not decorate."

Under his fourth heading Mr. White summarizes paints for concrete, with the practical conclusion that there are none which fulfil all the requirements of a severe list which he gives. The principal of these are that it must be applicable to a wet surface and at the same time waterproof when set; it must be applicable to the concrete without previous treatment of the latter, durable, economical, and pleasing to the eye, must act as a bond between concrete and a plaster coat, and remain hard in the presence of water, in addition to possessing all the qualifications of ordinary paint such as working well under the brush, filling voids and leveling up irregularities of surface.

Although Mr. White did not say in his paper that he knew of any satisfactory paint, we have reason to believe that he has been instrumental in the production of one, or at least that it has been developed with a special view to fulfilling the requirements outlined in his paper.

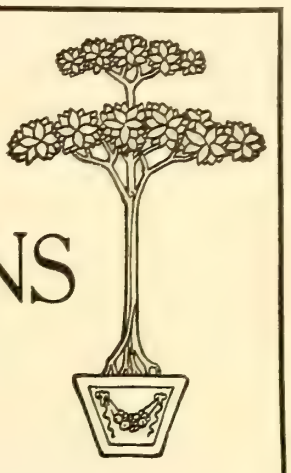
We have recently seen tests and the results of long-continued tests, of a paint called Cementhide, which seems to fulfil all the exacting conditions above referred to.

At a cement-block factory in Newark, N. J., a part of the process consists of the curing of the newly made blocks by subjecting them to steam for thirty-six hours, accelerating their setting and providing a much more constant and uniform supply of moisture to the cement than can be obtained by spraying.

For this purpose two curing rooms are used, each of which is opened to be emptied and refilled on alternate days, the steam being turned off in the morning and on again at night. The steam is therefore continuously applied to the interior of the walls for 36 hours out of every 48. The rooms themselves are built of concrete blocks, and were formerly constantly saturated with moisture. It was evident from the outside which room was filled with steam from a thin film of moisture trickling down the exterior of the walls, which had to be drained away. Six months ago the interior was painted with two coats of Cementhide, and now there is no evidence of moisture on the outside of the walls, while the interior has a smooth, hard surface differing little from that of well-finished cement except in its pleasant color.

Blocks made identically as possible from one batch of concrete have been tested under varying conditions, one plain and the other painted. The unpainted block was found to vary in weight with the water, absorbing it according to the amount present in the atmosphere or from the ground, while the weight of the painted block varied not at all. Blocks painted in a variety of pleasing colors have been left exposed to sun, rain, and wind for months without being apparently affected. Concrete painted with this material takes a plaster coat better than natural concrete, both concrete and plaster adhering to the paint more firmly than they do to each other. It has even been shown that the rise of moisture by capillarity in monolithic concrete set in moist ground is stopped by a coat of Cementhide between the top of the underground concrete and the masonry or other concrete continuation upward of the wall. The paint has a dull finish not unlike the concrete itself, but smoother and of any color desired, and appears to remain hard and to preserve the surface of the concrete indefinitely. One can not imagine a more severe test in any ordinary building than that imposed at the block factory above mentioned, and it would seem that this paint should have widespread possibilities when it is sufficiently introduced on the market.

AMERICAN HOMES AND GARDENS



Price, 25 Cents. $3.00 a Year

CONTENTS FOR DECEMBER, 1909

PAGE

American Homes and Gardens Garden Competition: The First Prize Garden. The Lily Pond beneath the Trees 454
Monthly Comment—Art and Household Decoration 456
American Homes and Gardens Garden Competition. The First Garden Prize of One Hundred Dollars Won by Charles J. Pilling, Esq., Lansdowne, Pennsylvania .. 457
The Craft of Hammering and Piercing Metal ..... *By Mabel Tuke Priestman* 463
Some Western Homes—Costing from Four to Six Thousand Dollars. *By Francis Durando Nichols* 465
Concrete Ornaments for the Garden and How to Make Them—IV. A Concrete Fence ..... *By Ralph C. Davison* 471
The Interior Details of the Bungalow and Its Furnishings. *By Kate Greenleaf Locke* 477
Making Soil ..... *By E. P. Powell* 481
Homes of American Artists—"Fleetwood," the Residence of Robert V. V. Sewell, A.N.A., Oyster Bay, Long Island ..... *By Barr Ferree* 482
Colonial Fireplaces and Fire-Irons ..... *By Mary H. Northend* 488
Correspondence:
Problems in Home Furnishing ..... *By Alice M. Kellogg* xiii

Largest Olive Ranch in the World — Drop Light Made from an Oil Lamp
On Waterproofing Concrete
Grafting for Boys — Garden Notes — New Books

Combined Rate for "American Homes and Gardens" and "Scientific American," $5.00 per year
Rate of Subscription of "American Homes and Gardens" to foreign countries, $4.00 a year
Rate of Subscription of "American Homes and Gardens" to Canada, $3.50 a year

Published Monthly by Munn & Co., Inc., Office of the "Scientific American," 361 Broadway, New York

CHARLES ALLEN MUNN, President
361 Broadway, New York

FREDERICK CONVERSE BEACH, Secretary and Treasurer
361 Broadway, New York

[Copyright, 1909, by Munn & Company. Registered in U. S. Patent Office. Entered as second-class matter, June 15, 1905, at the Post Office at New York, N. Y., under the Act of Congress of March 3, 1879.]

NOTICE TO CONTRIBUTORS—The Editor will be pleased to have contributions submitted, especially when illustrated by good photographs; but he cannot hold himself responsible for manuscripts and photographs. Stamps should in all cases be inclosed for postage if the writers desire the return of their copy.

American Homes and Gardens Garden Competition : The first prize garden. The lily pond beneath the trees

AMERICAN HOMES AND GARDENS

Volume VI December, 1909 Number 12

American Homes and Gardens Garden Competition: The first prize garden. Pond borders and shrubbery

Monthly Comment

Art and Household Decoration

HOUSEHOLD decoration is a very broad term that does not need to be exaggerated to include practically everything that helps to make the house interesting. If it does not include the structure and material of the walls, it at least embraces their color; it is concerned with carpets, rugs, hangings and draperies; the furniture forms an important problem to be solved by its laws; in a word, it sums up everything that enters into the grace and beauty and interest of the interior. This being the case, it would seem a natural and orderly proceeding that this highly important matter should receive the utmost consideration from every householder, and should be treated with the same respect that is given to the exterior design, the arrangement of the plan or the hygienic character of the sanitation. As a matter of fact and of practise, it is either not considered at all, or it is left to individual "taste," or the whole dwelling is turned over to professional decorators, furnishers or upholsterers, and the owner receives it "complete" from the hands of his contractors.

AND a very good way the last is, too, particularly if you do not happen to possess any idea of your own, or if those you have are absolutely untranslatable into the complex language of household art. It is the safest way, too, for many people, and undeniably the most profitable for the fortunate firm that receives the contract. Under the guise of real art the most expensive devices and the most costly materials are rolled, lugged and carried into the house, fastened to the walls, stood around the rooms and applied everywhere. The victim gazes in an awestricken manner at his bills for velvet and brocade, and is very certain that only the "realest" things in art can be supplied at such altitudinous prices.

IT IS unfair, however, to suggest that the professional household decorator is undesirable and a person to be avoided. On the contrary, he fills a noble and useful purpose in the household art of to-day. He has, it is to be presumed, been trained in his profession; he has had experience in the furnishing of houses and is able to distinguish between the good and the bad without any hesitation. In most cases he is able to do his work very much better than the owner of the house; he will give better results and yield better satisfaction. In very many cases he is not only worth what he costs, but is a positive economy. He has done much work, and much excellent work in creating a true art character in the home, and has established himself as a member of an important, helpful, beneficial and admirable profession.

BUT if he falls from grace, it is in the household of the rich. It seems impossible to resist the temptation of supplying the most costly things for the most costly houses. Often he cannot help himself, for this will be precisely what his wealthy client demands. Unable to exhibit his wealth by papering his walls with banknotes, stocks or bonds, he orders that a plentiful supply of these useful articles be translated into costly bronzes, marbles, velvets, brocades, rugs, furniture and bric-à-brac, and then tries to make himself as comfortable as he can amid these splendid surroundings. Often, no doubt, he can, for the man who wants these things, and can buy them, would not be happy without them, particularly if his neighbor across the road is similarly equipped.

A GENUINE objection to his display is not its essential costliness, but the confusion of cost with art. There is nothing easier in the world than to buy a very poor work of art for a very great cost. It is being done every day, and doubtless will be done for many days to come. Now, art itself is costly, whether it be in the form of painting, sculpture, pottery, rugs, embroidery, furniture; and it must be costly, because, unless produced by a competent craftsman with infinite toil, it must sink to the commonplace and cease to be art in any sense. But the price of the article has nothing to do with its art qualities, since the very poorest art can, and alas! does, frequently command the highest prices. This, of course, happens, because the person purchasing the article has himself no idea of what art quality is nor, indeed, what art means nor of what it consists.

AND yet, although art is costly, the artistic home need not be high-priced. A very excellent fundamental rule that should always be kept in mind is that nothing should seem to have cost more than it did. Abolish the thought of cost altogether from your proceedings and make art, not money, the criterion by which the furnishing of the house is measured. And this rule is quite as admirable for persons of moderate means as for those who never stop to count the cost of anything they possess. For it is the art value alone that counts, and this is the only thing of importance.

HOUSEHOLD decoration having, therefore, no relationship with cost, it follows that the modest home may, in its way, be as artistic and as beautiful as the most expensive. There is no secret about it; it consists simply in knowing what to do and how to do it. Many people think they know how, and very awful are some of the results of their mental cogitations on this subject; others are fearful of paying people for doing what they think they can do themselves, or what they know their friends and acquaintances have done without outside assistance. Yet, for even a slight sickness it is better to call in a physician than to run the risk of a serious illness; why, then, take the risk of surrounding one's daily life with impossible furnishings and decorations under the mistaken notion that one knows what one likes?

ART blindness is one of the commonest of diseases. It is a strange disease that seems to leave the sufferer quite untouched. He never knows he has it, and may live a long and merry life with it in a most exaggerated form. There are some physical diseases that affect humanity in the same way; but art blindness is a mental disease, a subjective disease, and, if not contagious, at least obnoxious in its effects, since it is the chief means of the support of the purveyors of bad art. This is the real source of all the trouble. People do not know a good work of art when they see it. They do not know what it means nor what lesson it may have for them. They are not interested in art and only know of it as one of the luxuries of life. Modern conditions are not conducive to the application of the most expensive forms of art to the average daily existence; but at least we may have good rugs and carpets on our floors; our chairs and tables may be of comfortable form and graceful aspect; our curtains and draperies may be pleasant if not expensive; and our wall coverings should be above criticism. All this we can have and at no greater cost than that we must pay for monstrosities if we but go about it in the right way. The artist who builds and furnishes his own home does not have to seek advice; but those who need it should lose no time in seeking it.

American Homes and Gardens Garden Competition

THE FIRST GARDEN PRIZE OF ONE HUNDRED DOLLARS

Won by Charles J. Pilling, Esq.

Lansdowne, Pennsylvania

THIS garden, as will be noticed by referring to the plan, is about 100 feet in width and less than 450 feet in depth, in other words, about one acre. It is within a few miles of one of our large cities; no description will be given of the house; all that is written will be in reference to the grounds.

The front part, or street end, consists of the usual lawn, paths, driveway, trees and shrubbery, showing croquet-ground in the front and tennis-court on the side. This portion of the grounds has been laid out for about fifteen years, but particular attention is called to the back half, or what, in most properties, is considered the least desirable portion.

Beginning back of the turn in the driveway, a path leads down the hill and joins several other paths. This back-garden eight years ago was neglected and not used. The natural advantages at that time were three large trees and a spring of clear water that came out of the ground and immediately went back and ran away under the ground; the surrounding country is a beautiful valley. From these conditions evolved the garden shown in the accompanying photographs.

It is essentially a rough natural garden, with hundreds of azaleas, ferns, evergreen trees and dwarf maples growing between and covering the moss-covered rocks. While this back portion of the garden covers only about one-half an acre, its perfect proportions make it seem very much larger.

The rock construction was done a little each year, as most of the planting, covering a period of six or seven years, but most of the work was done in the spring and some of it

It is essentially a rough natural garden

AMERICAN HOMES AND GARDENS GARDEN COMPETITION. THE

IRST PRIZE GARDEN. THE TROUT POND AND WISTARIA ARBOR

AMERICAN HOMES AND GARDENS GARDEN COMPETITION. THE FIRST PRIZE GARDEN. THE TROUT POND AND WISTARIA ARBOR

in the fall; none, or very little, in the summer or winter; it could all be accomplished in one year with sufficient help, but much of the pleasure is in its gradual growth.

The rocks used were not from quarries, except for the steps; the balance are large natural weather-beaten moss-grown stones brought from a nearby creek.

The setting of the rocks is very carefully done, so that a cavity of soil without stone-bottom will always occur, thus allowing the roots of the plants to grow deep into the earth for moisture.

Stone steps and wood lantern

Three ponds appear in this garden; the largest, or trout pond, is the result of the spring, which has quite a large supply of very cold fresh water. This pond contains brook trout, of course; these fish remain in the pond winter and summer. From this pond the water runs off into a winding creek artificially made and yet very natural in appearance, until the water, flowing over a small waterfall, enters the next or bridge pond. This, again, runs along until it seeks the lily pond. This lily pond, after becoming full or to the level of the preceding pond, is so arranged that the water runs off into an overflow, thus preventing the cold water from continually entering the lily pond. The reason of this is that cold water will prevent lilies from blooming freely.

Particular attention is called to the construction of the ponds. The walls and bottoms are made of concrete, yet by referring to the photographs it will be noticed that it is impossible to see any of the concrete walls because every thing is covered with rocks and growing plants. The greatest care has here been exercised, and should be exercised by any one making ponds, to make them tight because, if the pond leaks, it will cause much trouble.

Over the trout pond is built a trellis or wistaria arbor. This arbor, with the wistaria, is very much admired. In the lily pond is a collection of water lilies and other aquatic plants; right here it should be mentioned that water plants are very easy to grow and should be in every garden. A properly constructed pond, filled with water plants and a few goldfish, will improve the appearance of any garden. The plants and fish keep the pond entirely pure, as far as any unhealthy conditions are concerned.

In this garden we range all the way from cold water and brook trout to warm water with goldfish and water lilies.

Two wood and one stone bridges have been thrown over the water-courses; not because the garden was so large, but because the spanning of the water with the small bridges impresses one with increased size and artistic effect. The stone bridge thrown over the creek is a large oblong piece of granite, such as used for street-crossings, with heavy cedar hand-rest. The other two bridges are of wood; one, of rustic cedar, left its natural color, and the other, slightly curved, painted red.

The size of these ponds, as well as the paths, may be easily figured out by referring to the plan shown herewith.

The pavilion over the lily pond is of rough cedar with weather or natural-stained shingles, in fact, the entire structure is free of paint, and by this time has assumed a soft coloring from exposure to the weather.

The plants are, perhaps, divided equally into deciduous and evergreen, but especially note that all are hardy, as every thing in this garden, including plants and fish, remain exposed all winter. Their permanence is not only a desirable, but also necessary, feature of this garden.

The small bridges add to the apparent size and the artistic effect

The path leading from the driveway down to the main rock is planted with Japanese flowering cherry trees. This tree, as is well known, bears no fruit, but in the early spring they produce beautiful soft pink blossoms. Japanese iris, the most beautiful of the iris family, have been planted around the ponds and in other damp places. Ornaments have been almost entirely kept away from this garden. The only ones that are shown are three stone and

two wood lanterns. These blend with the landscape and anything else in the way of ornaments would be entirely out of place. It is perfectly proper if one walks along the wild path to see a simple stone lantern evidently placed there to light the path.

A recent writer has described the garden in the following word:

"The 'wildness' of its approach is one of its chief attractions. Winding pathways of stepping-stones and rugged stone stairways leading down sharp inclines lead from the house and lawn through luxuriant tangles of Japanese maples and dwarf evergreens down to the lantern-guarded course of the water supply, which forms one of the principal charms of the entire garden. From this spot one catches a glimpse of the whole expanse of streams and ponds, rustic and stone bridges, islands, hillocks and valleys, with the white gleam of stone lanterns here and there, but the 'wildness' is intensified when one follows all the intricate pathways leading over the little mountainsides and crossing and recrossing the streams."

A winding path beneath the trees

The owner of a garden who has labored in it and loved it from the beginning, as I have done, must feel a keen interest in it in every aspect. To me, no doubt, this garden means more than it may to others, for it has grown year by year. Each season has seen new beauties, each season suggested new improvements and betterments. There are, of course, limits to what one might do. I have not felt that we have done too little, and I earnestly believe we have accomplished much. To me, at least, it is satisfying, and this, I take it, means success in garden making. And I believe we have not tried to do too much. The temptation to overdo is often strong and difficult to resist.

CHARLES J. PILLING.

The concrete linings of the ponds are concealed by rocks and growing plants

Excavating for the garden

Building the forms for the concrete wall of the lakes

The lakes after they were filled with water

THE PLANTING

The Plan has been numbered, thus locating the different trees and shrubs

1 Maple, Norway
2 " "
3 " "
4 " "
5 Magnolia
6 Maple, Weeping
7 Purple Beech
8 Rhododendron
9 Pyranide Oak
10 White Broch
11 Maple, Norway
12 Althea Hedge
13 Lilac
14 Crimson Rambler on Post
15 Pin Oak
16 Sour Cherry
17 Maple, Norway
18 Buttonwood
19 Ginko
20 Plum
21 Dwarf Maple
22 Lombardy Poplar
23 Scarlet Oak
24 Dwarf Maple
25 Larch
26 Collection of Hardy Azaleas
27 " " "
28 Pyramidæ Evergreen
29 Collection of Hardy Azaleas
30 Flowering Cherry
31 " "
32 Apple
33 Pie Cherry
34 Horse Chestnut
35 Collection of Dwarf Evergreens
36 Azalea Hill, All Hardy
37 " " " "
38 Azalea Hill, All Hardy
39, 40, 41, 42, 43, 44 Collection of Japan Maples, Dwarf Evergreens and Hardy Azaleas
45, 46, 47 Dwarf Pines and Japan Maples
48 Magnolia
49 Flowering Cherry
50 Pine
51 Flowering Cherry
52 " "
53 " "
54 " "
55 Hardy Azalea
56 " "
57 Japan Maple
58, 59, 60 Dwarf Pines and Hardy Azaleas
61 Large White Oak, probably one hundred years old
62 Large Old Maple
63 Hardy Azaleas
64 Pin Oak
65 Weeping Willow
66 Pussy Willow
67 Hardy Azaleas and Japan Iris
68 Azalea Hill
69 Island Planted with Dwarf Maples and Evergreens
70, 71 Dwarf Evergreens and Japan Maples
72 Pine

SMALL PLANTS

WATER LILIES

Gladstoniana
Laydekeri purpurata
Laydekeri rosea
Marliacea chromatella
Pygmaea, white
Pygmaea, yellow

OTHER AQUATICS

Striped calamus
Eichhornia crassipes major
Limnocharis Humboldtii
Pontederia cordata
Sagittaria Chinensis
Vallisneria spiralis

HARDY AZALEAS

A. Hinodegiri
A. Fuji-Manyo
A. Mollis Kirenge
A. Indicum, Matsushime
A. Omurasaki
A. Kirishima
A. ledifolium, var. Leucanthum

SMALL EVERGREENS

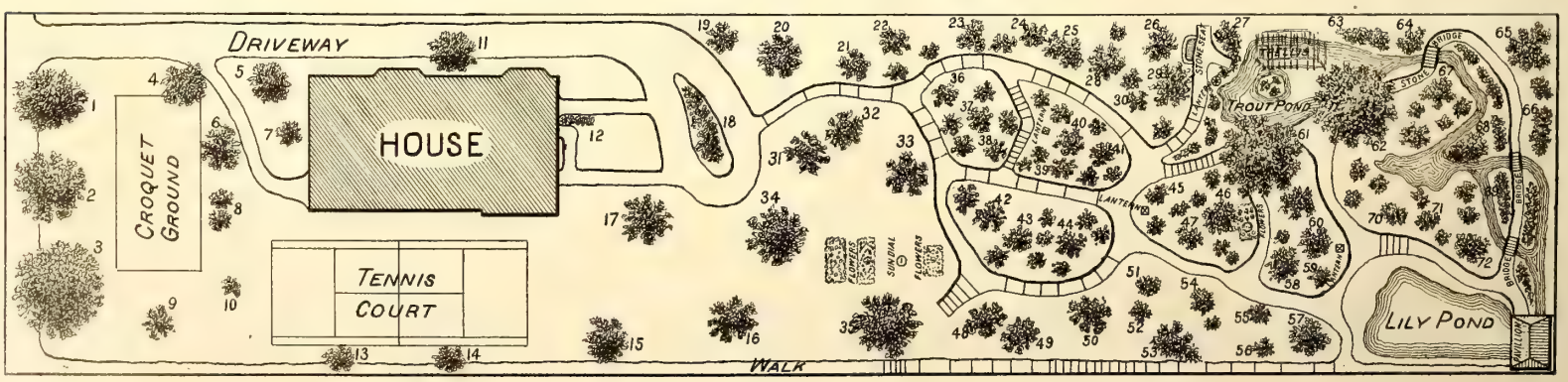
Chabo-Hiba (dwarfed Thuya obtusa)
Sciadopitys verticillata variegata
Juniperus Chinensis procumbens
Pinus Tanyosho
Pinus Koraiensis

JAPANESE MAPLES

A. atropurpureum (Nomura)
A. Oshiu-beni
A. Japonicum (Itaya)
A. sanguineum, Seigen
A. roseum (Kagiri)
A. versicolor (Oridononishiki)
A. Osaka-zuki
A. atrodisectum variegatum
A. sanguineum Chishio
A. dissectum
A. atropurpureum dissectum

MISCELLANEOUS

Iris Kaempferi
Wistaria brachbotrys
Magnolia stellata
Magnolia conspicua
Wistaria Chinensis
Cornus Kousa



The garden plan: about 450 feet long by 100 feet wide; area, about one acre

The Craft of Hammering and Piercing Metal

By Mabel Tuke Priestman

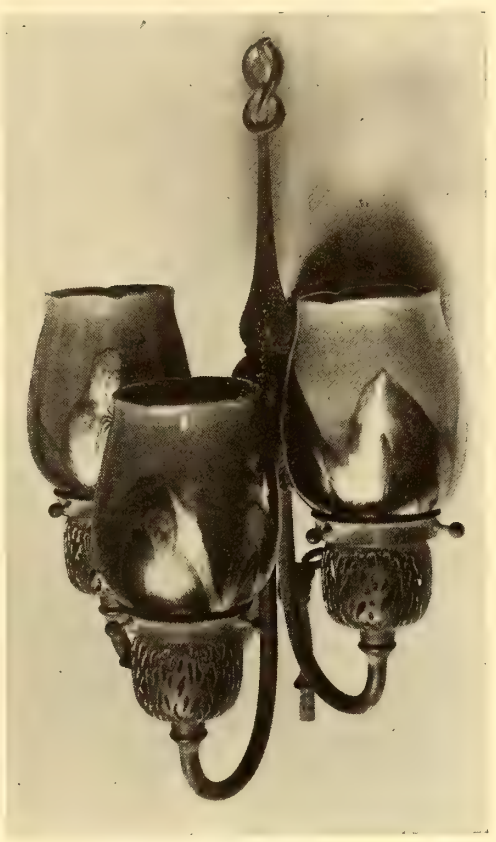
A NAIL AND HAMMER are the chief tools needed to work up beautiful designs on metal. There is a wide field for original work in this direction, and no end of uses to which it can be put. Pewter, tin, copper, or brass, can, any of them, be decorated in this manner, after the article is hammered into the desired shape.

Repoussé work is done in two ways: one by hammering on the face with a tool so that the background is driven in, and the design remains in relief; the other method is done by laying the metal face downward on a yielding bed of pitch or soft wood and pushing out the design by hammering. The first process is the one used for pierced metal and has the advantage of requiring very few tools.

A block or panel of soft pine wood about 8 x 8 and about an inch deep must be procured. Sheets of brass or copper may be had in many sizes, six to twelve inches being a useful size to select. Choose a thickness that can readily be cut with the shears. No. 25 gage is a good medium weight of sheet metal. See that the metal is free from blemishes, scratches or indentations.

The following materials are needed for doing the work: a wooden mallet, a small round-faced hammer, tracers or nails (the ordinary 10-penny wire-nails will answer, and several sizes must be bought), a pair of shears, a vise and a hardwood block, pliers, a file, a rivet set and some small rivets. Then get a piece of metal and iron it flat, or hammer on the hardwood block, screwing it onto the block near the edge of the metal. The design having been decided on, it must first be drawn on thin strong paper with a very black pencil. Then gum the edges to hold it in place and go over it with a paper-knife or any hard substance, rubbing carefully until the pattern is transferred. Carbon-paper can be used if preferred, and the outline must then be gone over with a dull-pointed instrument. Then go over the design with pen and ink, after removing the paper. It is always best to go over the design a third time with a sharp instrument or scratch-awl, as the ink-lines are easily effaced by the hand passing over the metal.

The most interesting part is done next; namely, that of hammering the background with a sharp nail, allowing it to pierce the background each time it is hammered, being very careful not to go over the edge of the design as it must stand out in sharp relief without jagged edges. Do each piece in turn until all are decorated, when they are ready to be hammered into shape.



Electrolier with pierced holders

It will be best for the beginner to start on a simple form like a lamp-shade. This is made in the form of a circle. Take a compass and describe first the inner circle, which will be the top of the shade, then the depth must be decided upon, and the other circle drawn at the required depth from the same center. More than half a circle will be needed for the correct flare and about one-fifth of the remaining half circle will be found to make a well-proportioned shade. A flap must be left for going underneath the joint at one side. When the shade is decorated it is then riveted. The pattern should never extend to the extreme edge of the shade. A good wide margin at the top and bottom greatly improves it. Make the design on paper and glue it onto the metal and transfer it as already described, carefully outlining the pattern with a scratch-awl, then remove the paper by washing it off, and prick the background with a sharp nail, or a pin placed in a tool-handle. When all the background is perforated with even holes, it is ready for the final process. Cut the shade out of the piece of metal, with the shears, and file the edges smooth. Turn the edges back with the pliers, and hammer on the back of the metal until they are firm and even, the double metal at the top and bottom makes a much more finished article. Then bend the shade up with the hands, as evenly as possible, and hammer with the mallet, being careful not to close up the whole when the shade is compressed until the flap overlaps. Mark the places for the middle rivet-hole on the flap and shade, punch and rivet. Then proceed with the other rivets in the same manner.

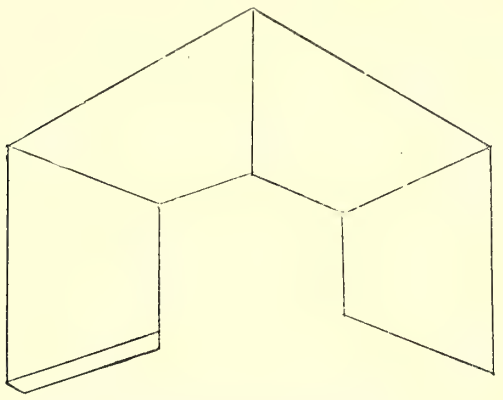
The process of riveting is done in the following way: After marking the place on the metal where the rivets are to go, see that the underpiece is accurately measured. Then punch with a nail upon the end of the hardwood block, using the steel hammer as the striking tool. The holes should be rather larger than the rivets. After the punching, a little rim is left around the hole; this must

Hammered and pierced metal ornaments for the desk

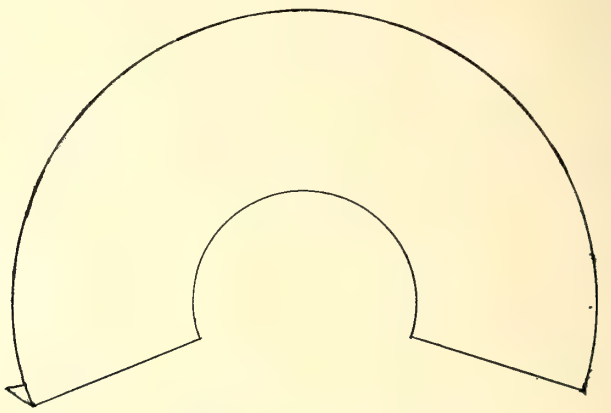
be filed a little, and then beaten flat with the hammer. If this closes the hole too much, it can be enlarged by the round file. It is most important that the rivet should fit snugly in the hole, not too tight and not too loose.

The illustrations show hexagon lamp-shades and jardinières, as well as circular ones. These are made on the same principle as the round ones. The pattern illustrations show the construction of a circular shade and one with four sides. The panels are shaped on the angle of hardwood block with the wooden mallet. The block is placed in the vise in such a position that the shade can be carefully shaped by bending on the angle of the block. It is best to hammer the metal into the desired shape before the background is perforated, thus enabling the worker to beat the metal without interfering with the pin-holes. By following these instructions practically all the articles illustrated can be made. The hall lantern is made in the same way, but it is advisable to make one first in thin pasteboard, so as to practise in a cheap material before making the attempt in metal. These simple articles are not all joined by rivets, a strip of metal is left sticking out, and a corresponding hole is then made for it. After the piece is inserted it can readily be bent over to hold the pieces together.

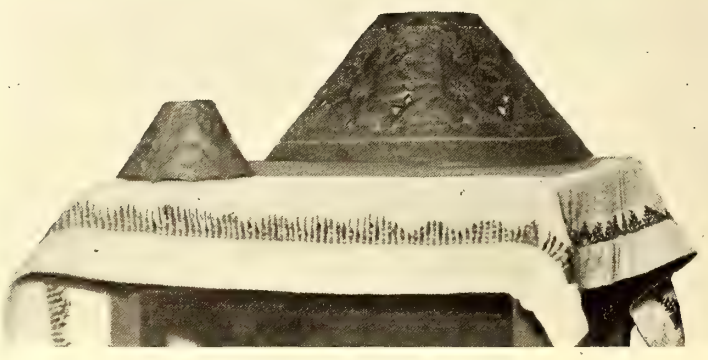
Shade and screen



Pattern for four-sided lamp shade



Pattern for circular lamp shade



Circular lamp and candle shades

Perforated metal is so quickly done that the craftsman becomes fascinated with the joy of creating and is encouraged to twist and bend the metal into all kinds of interesting shapes. Variety can be given by the coloring and finish of the metal. Brass can be bright, copper dull or burnished, or both can be treated with an acid which turns them beautiful shades of green. Tin being very inexpensive the beginner can begin on that metal and can afterwards paint the finished article black.

There are many ways of polishing brass, but one of the best means is to take rotten stone or tripoli and turpentine and rub the surface with that, finally polishing with chamois. Another way to produce a bright finish is to paint the surface with oxalic acid. Copper or brass may be turned green by painting with repeated applications of alternate washings of diluted acetic acid and exposure to the fumes of ammonia or by immersing the metal in a solution of one part perchlorid of iron and two parts of water. Nitrate of copper is often used when the article is small enough to be boiled in a strong solution of it.

Copper can also be subjected to heat which makes it beautiful in color.

Although the craft of hammering and piercing metal is a comparatively easy one, and certainly an art that can be carried out with most inexpensive materials and in an inexpensive way, it should not be forgotten that a good deal of care is necessary to secure good results. This is true of all kinds of craft work, and is as true here as in other forms. But the technical processes are here very easy, and very little perseverance is needed to secure satisfactory results. The range of articles that may be made or decorated is, also, very large, and includes a host of serviceable and ornamental articles that any one would be glad to have or offer as gifts to one's friends. The work is not irksome and is a most agreeable form of home handicraft.

Lamp shades, jardinière, box and hall lantern

Some Western Homes

Costing from Four to Six Thousand Dollars

By Francis Durando Nichols

THE modern mind is rapidly coming to the conclusion that the country is the ideal place in which to live, even though one's business may be in the city, and this feeling has not been better developed than is expressed in the many beautiful suburbs to be found in the vicinity of Chicago. No city has better suburbs, and the reason of their beauty is that they are laid out with a definite plan in view. Broad avenues are lined with finely constructed roadways which are planted on either side with two rows of trees; one row extending along the middle of the grassed plats, which is twenty-five feet wide between the curb and the sidewalk, while another row of trees is planted between the sidewalk and the fence-line. The houses being well set back from the street and on a line with each other give a greater breadth of space by the lawn extending from the sidewalk to the front line of the houses. In order to eliminate all the appearances of the usual fences the planting of shrubs in an artistic profusion between each house not only forms a privacy to the rear of the house, which is so frequently neglected, but it also maintains the dividing line of each one's property.

The group of houses illustrated herewith represents a very excellent type of modern house, costing from four to six thousand dollars. These houses are well-built and are thoroughly equipped with all the modern appointments, by which housekeeping is made easy and convenient for the modern housewife. The first house, illustrated in Figs. 1, 2, 3, 4, 5 and 6, was built for B. W. Cleveland, Esq., at Wilmette, Ill. It is an attractive house, and is constructed of stucco and shingles, the lines of which are well broken by an attractive porch and bay windows. The underpinning is built of red brick laid in white mortar. The remainder of the house is of wood. The main walls, from the water-table to the under side of the sills of the second-story windows, are covered with wire-mesh and given a triple coat of cement stucco finished in its natural gray color. The remainder of the wall surface above is covered with shingles stained a burnt-umber, while the trimmings, throughout, are painted ivory-white. The roof is shingled and is stained a moss-green. The entrance to the house is direct from the street to the porch, which is placed in the center of the house. This porch is provided with a stucco balustrade and stucco columns, which support the roof of the porch. The hall of the house is trimmed with cypress stained a soft brown color. To the left of the hall is the living-room extending the depth of the house and finished in old ivory-white. It has a paneled seat in the bay window, which is built at the side of the house, and an open fireplace built of brick with facings and hearth of similar brick, and a mantel of Colonial style. At the rear of the living-room a French window opens on to the living-porch, which is furnished in keeping with the house. The dining-room, to the right of the hall, has a white painted trim, and a plate-rack extending around the room. White painted battens extend from the floor to the plate-rack, form-

Fig. 1—The entrance-porch to Mr. Cleveland's house is massed with an artistic profusion of shrubs

Fig. 2—Mr. Cleveland's house is built of cement stucco and shingles

ing panels, which are of rough plaster and are tinted a soft yellow. A softer yellow color-scheme is used for the wall space above the plate-rack and across the ceiling. The service end of the house is most complete in all its appointments. The second story contains three bedrooms and a bathroom, and one servant bedroom over the kitchen. The former has white painted trim, with mahogany finished doors, while the bathroom is in white enamel throughout, and is furnished with porcelain fixtures, with exposed nickelplated plumbing. The third floor contains two bedrooms and a trunk-room. The heating apparatus and fuel-room and cold-storage and laundry are placed in the cellar. Mr. Howard Bowen, of Chicago, was the architect of this interesting house. The house, illustrated in Figs. 7, 8, 13 and 14, was built for Mrs. Rose M. Kavana, at Oak Park, Illinois, from plans of Lawrence Buck, architect, of Chicago. The house is a most interesting one, and thoroughly artistic and distinctive in character. The brick-walk, which leads direct to the entrance-porch, with steps also built of brick, leads to the front door, over which is built a hood with pergola effect. The massive wall space of stucco, of which the house is built, from the grade to the peak of the house, is well broken by an artistic grouping of small lighted windows. The soft gray of the stucco walls, the green of the trimmings, and the red of the shingled roof is most harmonious. The front door opens direct into the lobby, from which the living-room is reached. This living-room and the adjoining dining-room are finished with cypress stained a soft brown. The living-room has an open fireplace, with facings and hearth of brick, and a simple stained wooden mantel. A paneled seat is built in at the side of the fireplace. The staircase, ornamental in design, rises out of the living-room to the second floor. Opposite the staircase is built a French window, by which a pergola porch is reached. From the dining-room another French window opens on to the living-porch, which is formed by massive stuccoed arches. The service end of the house is most complete. The second story contains three bedrooms and bathroom, the latter furnished with porcelain fixtures and exposed nickelplated plumbing. The house of Harrison A. Smith, at Wilmette, Illinois, and illustrated in Figs. 9, 10, 11, 12, 15, 16, 17 and 18, is another type of the stucco house, and was designed by Mr. Howard Bowen. The exterior walls throughout are of gray stucco, while the trimmings are painted white. The roof is shingled and finished natural. The front porch, quite unique in its form, is built in the center of the house, while the living-porch, which is used in summer as a breakfast-room, is placed at the rear of the house, adjoining the living-room. This living-porch is connected with the lobby in order to have direct service from the kitchen. The hall is trimmed with oak, with a paneled wainscoting above which the walls are treated with a pea-green paint. The living-room is also trimmed with oak, and its walls are treated with a soft tone of écru. A broad open fireplace, with facings of red brick laid in white mortar, extends from the floor to the ceiling; the

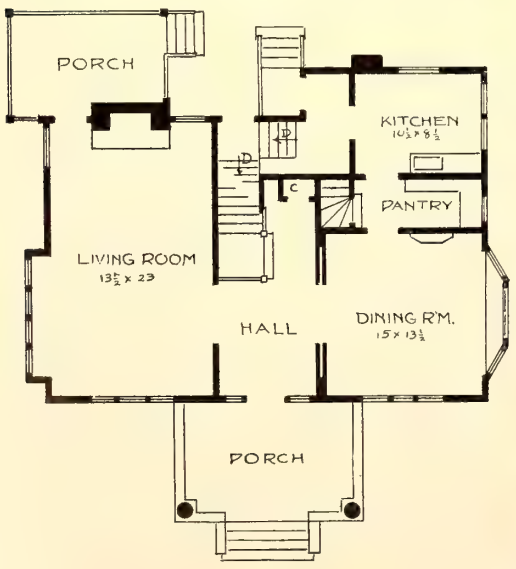


Fig. 3—The first floor plan

Fig. 4—The bay window of the living-room is artistically designed with leaded glass in the upper sash

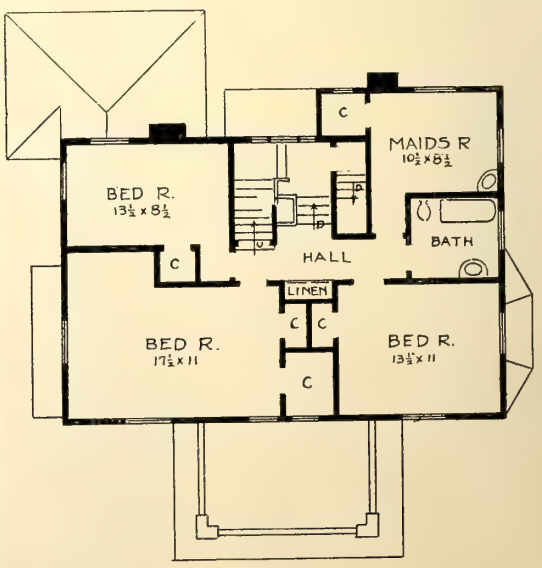


Fig. 5—Second floor plan

height being broken by a paneled wooden mantel-shelf. The bay window, placed at the side of the room adjoining the fireplace, is furnished with a paneled seat. French windows at the rear of the living-room open on to the living-porch. Low bookcases are built-in at either side of the French windows. The dining-room is trimmed with oak and has paneled walls to the height of seven feet, finished with a plate-rack. A sideboard is built-in at the side of the room, with leaded-glass doors, and the cupboard above the counter-shelf and drawers and cupboards below. The wall space above the plate-rack is painted a light yellow color. The ceiling is beamed. The butler's pantry and kitchen are trimmed with maple, and each is fitted up with the covered with a sloping shingled roof. The trimmings are painted white. The entrance-porch is placed at the front of the house and forms an access to the small lobby, which is, in reality, a part of the living-room. This lobby is, however, screened from the living-room so as to prevent the cold winter draughts from sweeping into the house, and at the same time gives some privacy to the living-room. This living-room is trimmed with oak. It has ceiling-beams. The walls are of rough plaster tinted écru. The inglenook has a broad opening covered with a Dutch hood, while in the recess is built a fireplace of red brick and finished with a mantel. Paneled seats are built on either side of the opening. The dining-room is also trimmed with oak finished

Fig. 6—Another view of Mr. Cleveland's house showing the other side

best modern fixtures. The second story contains the sleeping-rooms, all of which have white painted trim. One of the bedrooms has an open fireplace. One of the bedrooms has a yellow-striped paper finished with yellow-rose border, while another has gray walls with bands of pink roses forming a panel, and the third has blue-striped paper. The bathroom has a tiled floor and wainscoting, and is furnished with porcelain fixtures and exposed nickelplated plumbing. There is one room and a trunk-room in the attic. The laundry, store-room, furnace-room and fuel-room are placed in the cellar. Mr. Bowen also designed the house built for George H. Mars, at Kenilworth, Illinois, illustrated in Figures 19, 20, 21, 22 and 23. The house is quite distinct from the others illustrated in this series. It is constructed of stucco, for the exterior walls, and is tinted a soft yellow, while the entire building is in a dark Flemish brown. It has a batten wainscoting from the floor to the height of seven feet, at which point it is finished with a plate-rack. The walls are of rough plaster, and the spaces between the batten below the plate-rack is painted a Delft blue, while the space above the plate-rack is painted a mustard-yellow. The ceiling is beamed. The kitchen and its appointments are most complete. The second floor, containing four bedrooms and a bathroom, has a white enamel trim, with floors and doors stained and finished in forest-green. The bathroom has a tiled floor, and is furnished with porcelain fixtures and exposed nickelplated plumbing. The house is heated by a hot-water system, placed in the cellar. The cellar also contains the fuel-rooms and an instantaneous hot-water heater.

Special study has been given to the planning and the designing of the kitchens of the houses illustrated, both by

Fig. 7—The massive wall surface of Mrs. Kavana's house is broken by the grouping of windows

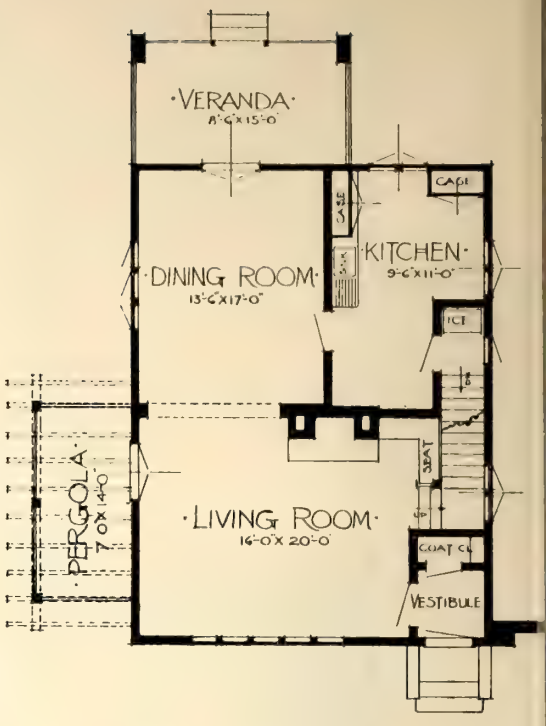


Fig. 8—First floor plan

Fig. 9—The stucco entrance-porch to Mr. Smith's house

Fig. 10—The dining-room of Mr. Smith's house is paneled with oak, finished with a plate-rack

Fig. 11—Mr. Smith's house is built of stucco and has a shingled roof

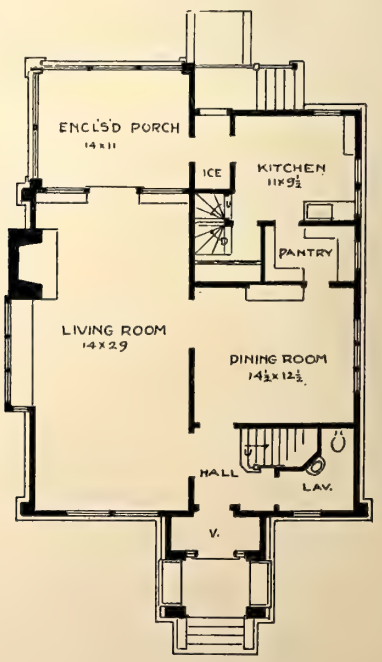


Fig. 12—First floor plan

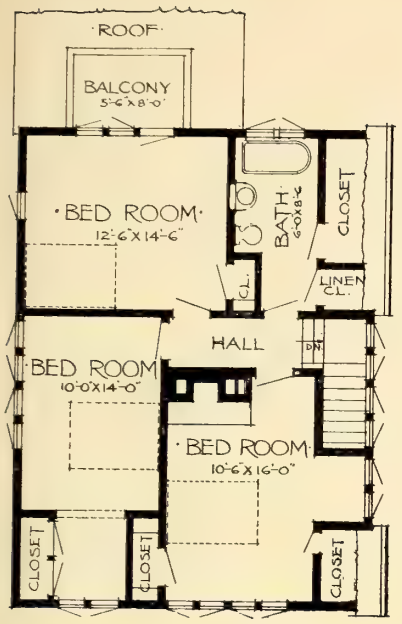


Fig. 13—Second floor plan

Fig. 14—Another view of Mrs. Kavana's house showing the side and rear porch

Fig. 15—The living-room of Mr. Smith's house has a brick fireplace with facing extending to the ceiling

Fig. 16—Bay window of the living-room of Mr. Smith's house

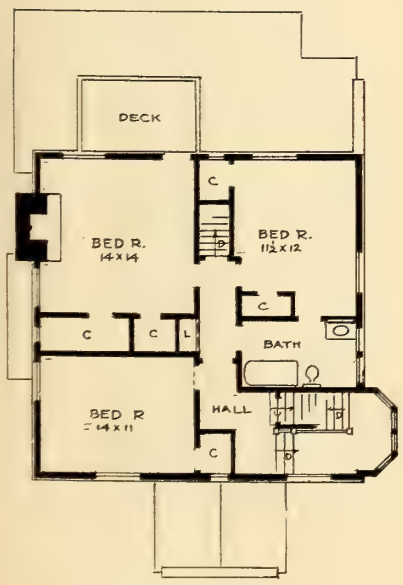


Fig. 17—Second floor plan

Fig. 18—Another view of Mr. Smith's house showing the other side of it

Fig. 7 —The massive wall surface of Mrs. Kavana's house is broken by the grouping of windows

Fig. 8 —First floor plan

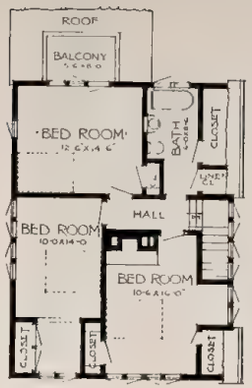


Fig. 13—Second floor plan

Fig. 14—Another view of Mrs. Kavana's house showing the side and rear porch

Fig. 9—The stucco entrance-porch to Mr. Smith's house

Fig. 10—The dining-room of Mr. Smith's house is paneled with oak, finished with a plate-rack

Fig. 15—The living-room of Mr. Smith's house has a brick fireplace with facing extending to the ceiling

Fig. 16—Bay window of the living-room of Mr. Smith's house

Fig. 11—Mr. Smith's house is built of stucco and has a shingled roof

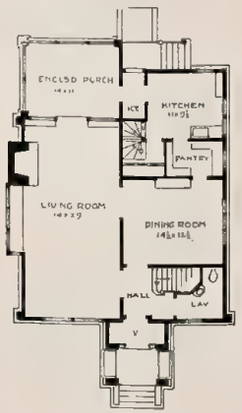


Fig. 12—First floor plan

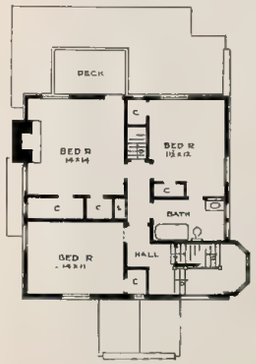


Fig. 17—Second floor plan

Fig. 18—Another view of Mr. Smith's house showing the other side of it

Fig. 19—Mr. Mars' house is also built of stucco and tinted a soft yellow

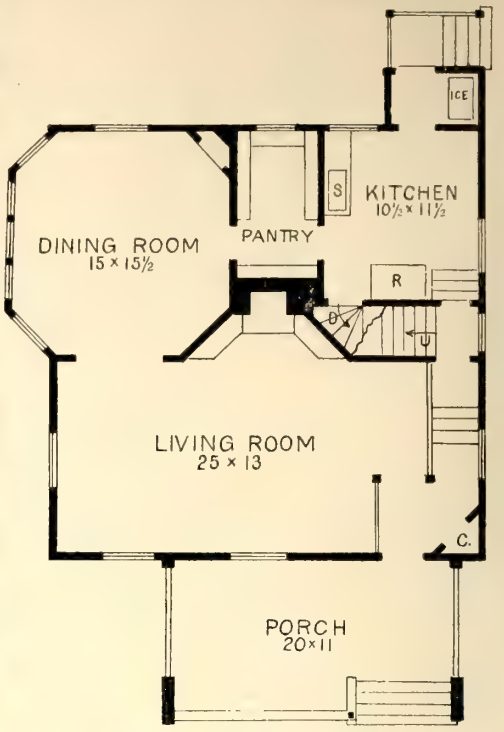


Fig. 20—First floor plan

the owners who have built them and by the architects who designed them. The kitchen is one of the most important apartments of a house, and yet it is a room more frequently neglected than any other room of a house.

Much thought has to be given to build a kitchen which will be just the right size and to equip it with every modern labor-saving device. All cooking in the Western home is done by gas, and the water is heated by a gas water-heater, both of which are labor savers.

Another feature of the model kitchen is the building of numerous dressers with drawers and doors glazed with small lighted glass, so as to eliminate the usual dark pot-closet and pantry which are usually provided.

Another saver of steps and labor is the living-porch, which is built and enclosed with screens in summer and with glass in winter, and is within easy access to the kitchen or butler's pantry, so that the living-porch may be used for dining uses in summer, thus saving the necessity of using the dining-room.

Fig. 21—The dining-room of Mr. Mars' house has batten wainscoting finished with a plate-rack

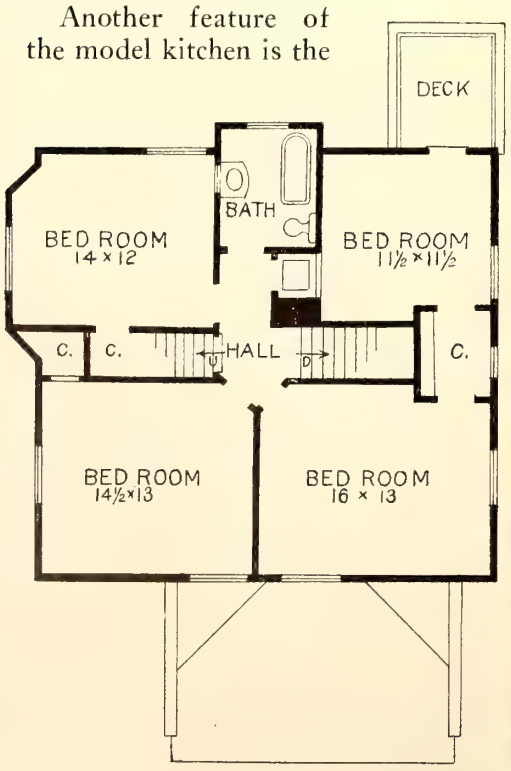


Fig. 22—Second floor plan

Fig. 23—Another view of Mr. Mars' house showing the graceful lines of its roof

Concrete Ornaments for the Garden and How to Make Them

IV.—A CONCRETE FENCE

By Ralph C. Davison

CONCRETE fences are becoming more in favor every year, for the reason that they always look substantial and neat, and at the same time require practically no expense for maintenance. The accompanying illustrations are suggestive of what is and can be done in concrete fence work.

The first thing to do in building a fence is to prepare a good foundation or base for it to rest on. Care should always be taken to see that the base is placed deep enough in the ground to obviate all trouble which may arise from frost or the heaving of the ground in the spring of the year. The depth of the foundation depends largely upon locality and the nature of the soil, but usually a depth of from 18 inches to 3 feet from the surface of the ground is sufficient to overcome any trouble from frost.

To prepare the foundation, a trench should first be dug, as shown in Fig. 1. This should be about 14 inches wide. The depth depends, as stated above, upon the locality and nature of the soil. The bottom of the trench should be well tamped down, so as to make a good solid bottom on which to deposit the concrete which should be composed of 1 part Portland cement, 3 parts of sand, and 5 parts of broken stone or gravel. This mixture should be placed while fairly wet, and should be well tamped down and leveled off. The foundation, after having set or hardened for from one to three days, will be ready to receive the fence-posts and rails or panels which may be of various designs.

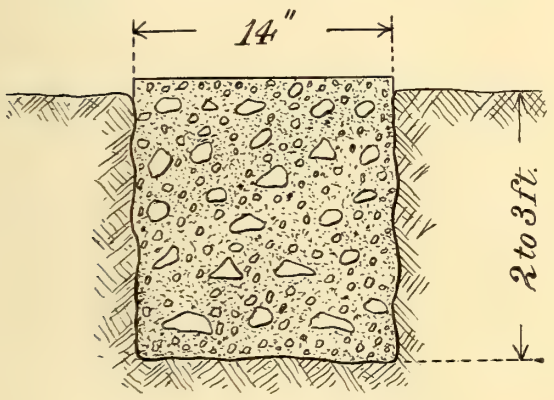


Fig. 1—Concrete foundation

The fence-posts are usually made in wooden molds, and set up and cemented in place on the foundation after they are finished. The posts and post-caps are cast separately, as shown in Figs. 2 and 3. A detail of the post-mold is shown in Fig. 2. It consists, as shown, of a square box built up of ¾-inch to 1-inch boards braced by 2-inch by 4-inch studding. These posts can be made of any desired dimensions. As a rule, a good size is about 12 inches square by from 3 feet to 4 feet high. A mixture composed of 1 part Portland cement, 2 parts of sand, and 4 parts of broken stone or gravel should be used for making the posts.

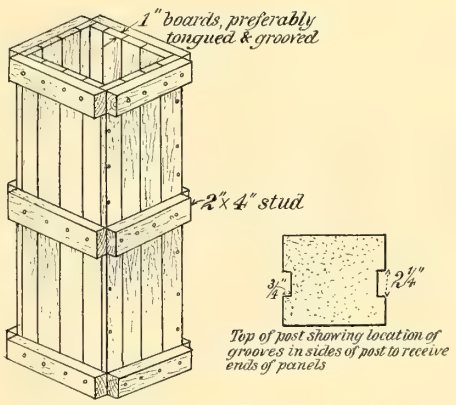


Fig. 2—Wood mold for posts

The post-mold should be placed on end, as shown in Fig. 2, and the concrete should be deposited while in a pasty state. It should be well tamped down, and by working the heavy stone away from the sides of the mold, while depositing, by means of a wooden paddle or pitchfork, thus allowing the finer particles of cement and sand to come to the face of the mold a smooth surface will be obtained on the cast. It would be well to shellac and grease the mold before depositing the concrete. Be sure to get the top and bottom of the mold square with the sides, for if this is not done, more or less trouble will be had in truing the posts up when placing them in position on the base or foundation.

The caps, as stated above, are cast separately from the posts. A simple form or mold for the post-caps can be made as shown in Fig. 3. This is composed of a wooden box made to the desired dimensions of the finished cap. The bottom or curved portion of the cap, shown at *A*, can be produced by securing to the inside bottom edges of the mold strips of wood molding of any desired shape neatly mitered at the corners as shown. This molding comes in standard sizes and shapes, and can be procured in long strips at almost any carpenter's shop. Shellac and oil the inside of this mold well before placing the concrete, for if one neglects to do this, trouble will be had in stripping the mold from the cast. When stripping or removing the mold from the cast, remove all four sides first before attempting to remove the bottom. It will be noted that the molding is secured to the bottom of the mold only, the four sides merely resting snugly against it when the mold is assembled. Care should also be taken to level off and trowel smoothly the top of the cap after the concrete is placed in the mold. Use the same mix-

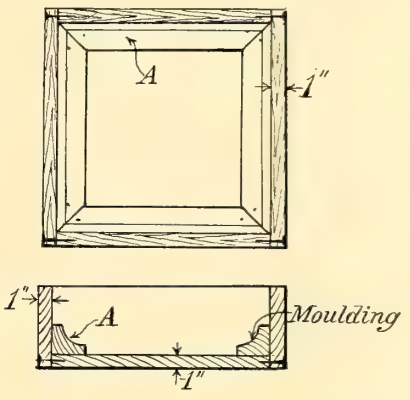


Fig. 3—Mold for post cap

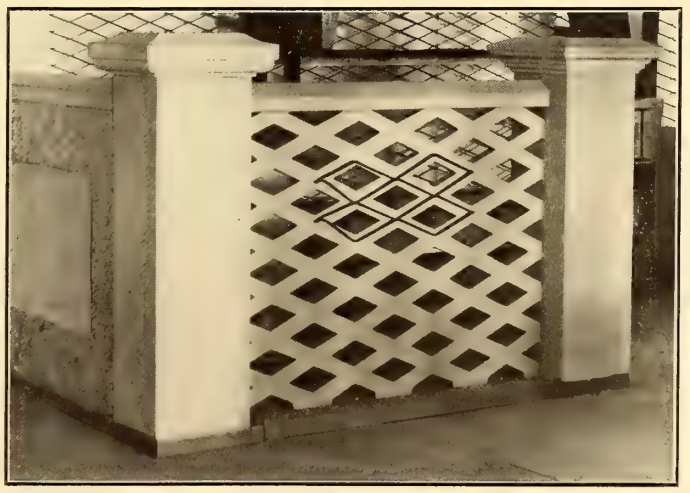


Fig. 4—Latticed panel design

ture for casting these caps as was used in making the posts.

Various designs are resorted to in filling in between the posts in fence work, such as balusters, scroll designs, panels, etc. The diamond or lattice design of railing or panel, shown in Fig 4, is largely used for porch work as well as fences. It is cast in one piece and is reinforced with a sheet of 6-inch mesh No. 4 expanded metal placed in the center of the concrete strands which are made about 2 inches square. The expanded metal reinforcing lends itself nicely to this design, inasmuch as the meshes are of a diamond shape. If, however, this metal is not available, ⅛-inch round or square steel cords can be used for reinforcing the panel, with good results. The method of making a fence panel of this kind is simple. All that is required in the way of a form is a box 2 inches deep by the desired height and length of the panel which is to be made. In the bottom of this box locate the position of the diamond-shaped holes. Then make of wood as many diamond-shaped blocks as are required, and secure them by nails in their proper position to the bottom of the mold. Allow a good draft or taper on all sides of the blocks as shown, so that the fence-panel, when cast, can be easily withdrawn from the mold. Before casting, shellac and oil well all part of the mold that will come in contact with the wet concrete. When the mold is complete, as shown in Fig. 7, place about 1 inch of concrete in it, then place the sheet of expanded metal or steel rods in position on it, and proceed to fill the mold flush with the top. Level off the concrete and allow it to set for two or three days, occasionally wetting it down well with water. After the concrete is hardened, the mold can easily be removed by gently tapping the surface of the exposed diamond blocks here and there through the surface of the mold. Any corners of the cast that may have been broken or injured in removing the cast from the mold can be readily pointed up with a mixture of cement mortar composed of 1 part Portland cement to 2 parts of sand. The whole surface of the panel can then be well wet down and painted with a mixture of neat cement and water mixed to the consistency of a thick cream; this on drying out will produce a good uniform color to the whole piece. The concrete mixture used in making this panel should be composed of 1 part Portland cement, 2 parts of sand, and 2 parts of gravel or broken stone, not to exceed ¼ inch in size.

Fig. 5—Rubble Panel

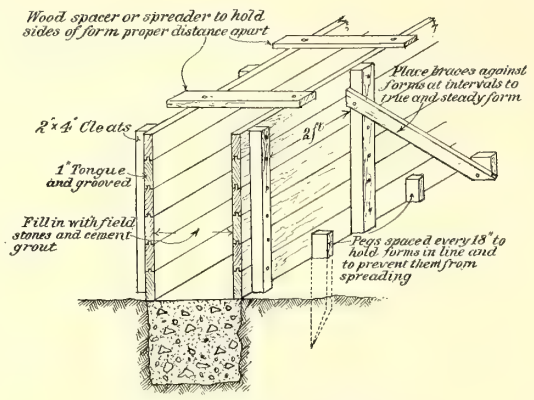


Fig. 6—Mold for rubble panel

In setting this panel in place, the fence-posts should be provided with a groove 2⅛ inches to 2¼ inches wide by 3½ inch to ¾ inch deep in the middle of their two opposite sides, as shown in Fig. 2. This is to allow the ends of the panels to set into the posts. After having located the panel in its proper position in the groove or recess, the recess should be filled in with cement mortar flush with the face of the post, thus producing a good smooth finish as well as firmly cementing the panel in place.

The panel should be topped off with a coping, as shown

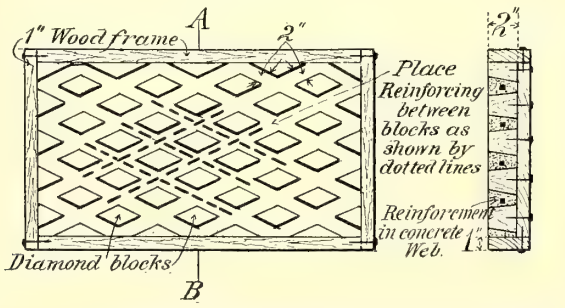


Fig. 7—Mold for lattice fence panel

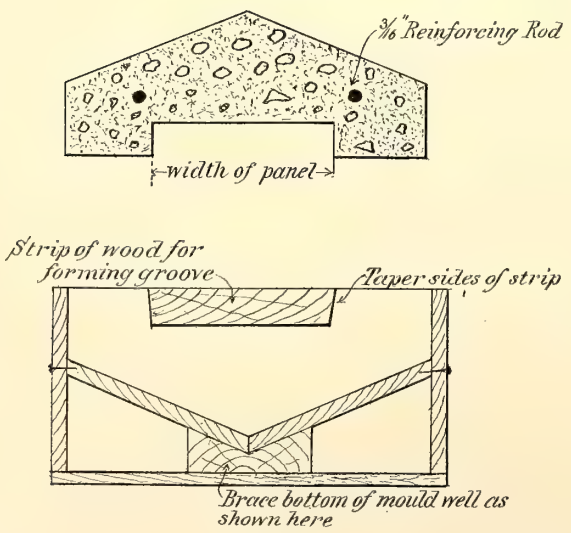
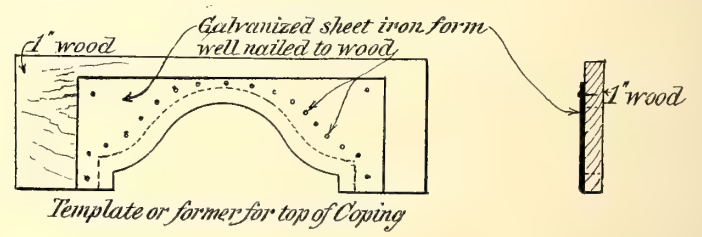


Fig. 8—Mold for lattice panel coping



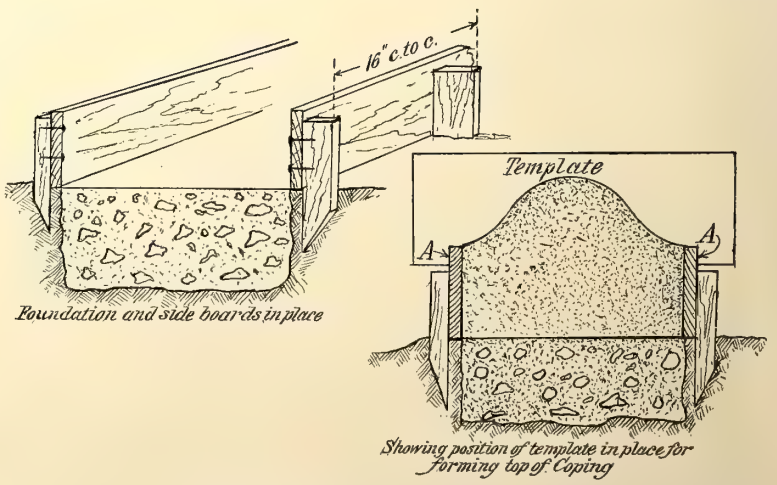


Fig. 9—Molds for low cement coping

in Fig. 4. The under side of this coping should also be provided with a groove, as shown in Fig. 8, of the same dimensions as the grooves in the sides of the posts, so that it can be let down on and securely cemented to the top of the panel. This coping can be cast in a wooden mold made as shown in Fig. 8. A strip of wood, tapered on the sides as shown, can be used to form the groove in the bottom of the coping. The mold should first be filled to within the thickness of this strip from its top. The strip should then be centered, and the concrete filled in on both sides of it until flush with the top of the mold. A mixture composed of 1 part of Portland cement to 3 parts of sand and fine gravel will give good results for this class of work.

Another very effective panel for fences is the rubble panel made of field stone shown in Fig. 5. This is made in a mold composed of four pieces of 2-inch by 4-inch lumber. This frame is made of the desired size of the finished panel. It is then laid down flat on a good level piece of ground and filled in with about 1 inch of cement mortar composed of 1 part Portland cement and 3 parts of sand. A sheet of steel reinforcing mesh, such as expanded metal or steel rods, is then placed on top of this 1 inch of mortar, and over the reinforcing is deposited about 2 inches more of the cement mortar, into which the field stones are embedded. The stones, before embedding into the mortar, should be well wet down. This panel should be allowed to harden, before attempting to raise it from its position, for at least from four to six days. It should also be occasionally well sprinkled with water. After it has thoroughly hardened it can be set up in place between the fence-posts in a similar manner as explained for setting up the diamond design of the panel. After this panel has been set in place, the rough side of it can be cleaned off and well wet down and finished, by means of plastering it with a cement mortar made of 1 part Portland cement to from 2 to 3 parts of sand.

The same rubble effect can be obtained in a solid wall by building up on the foundation a wooden mold, as shown in Fig. 6. This mold should then be filled in with heavy and light field stone, and when the mold is filled level with the top, a fairly thin creamy mixture of 1 part Portland cement to 2 parts of sand can be poured into the mold. This cement grout, as it is called, will find its way into all of the crevices or voids between the stones, and will securely cement them together. The mold should be removed in from twelve to twenty-four hours at the longest. The surface of the wall should then be scrubbed down well with a good stiff wire brush and plenty of water. This treatment will remove all of the surface cement, and thus expose the stone to view. If desired, a coping can then be cemented to the top of the wall, as shown in Fig. 5. A wall of this kind can be made of any length. Fence-posts can then be cast in place at the ends, or they can be cast separately, as previously explained and set up in place.

As stated above, when panels are used in the construction of a fence, the posts should always be cast with a groove or recess for them to fit into. When assembling a panel fence, the first post should be firmly cemented in position on the foundation or base with a mixture of cement mortar composed of 1 part Portland cement to 2 parts of sand. One end of the panel should then be located in the groove in

Fig. 10—Garden with cement balustrade and ornaments

the fence-post, and should be temporarily held in position until the next post is moved up into place, so as to engage the other end of the panel in the groove cast in its side. The second post and the panel should then be trued up and held in position by wooden wedges. The whole then should be firmly cemented in place with cement mortar, and the remaining posts and panels set up in like manner on the foundation until the fence is complete.

Low cement copings, such as shown in Fig. 11, are much in vogue along the sides of paths as well as sometimes being used to indicate the dividing line between two pieces of property. These copings can be easily constructed by the use of two boards, a few wooden pegs, and a metal template cut to the desired outline of the top of the finished coping. The first thing to do is to set the boards up along the foundation or base, as shown in Fig. 9, which has previously been made to the desired width, then drive in the wooden pegs as shown, spacing them about 16 inches apart. Nail the side boards to them firmly, and then line up the sides and level off the top of the boards. Now fill in the space between the boards with a mixture of 1 part Portland cement and 4 parts of fairly coarse sand.

Fig. 11—Low cement coping

Do not make this mixture too wet. Now make a former or template out of a heavy piece of tin or galvanized iron. Cut this to the form of the desired shape of the top of the coping, and nail it securely to a piece of 1-inch board, as shown in the illustration. Place this in position on the top of the two side boards, letting the edges of it lap over the sides of the boards, as shown at *A*.

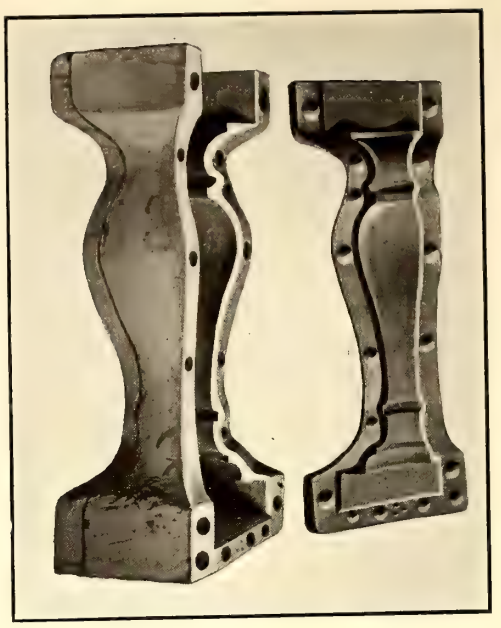


Fig. 12—Balustrade mold

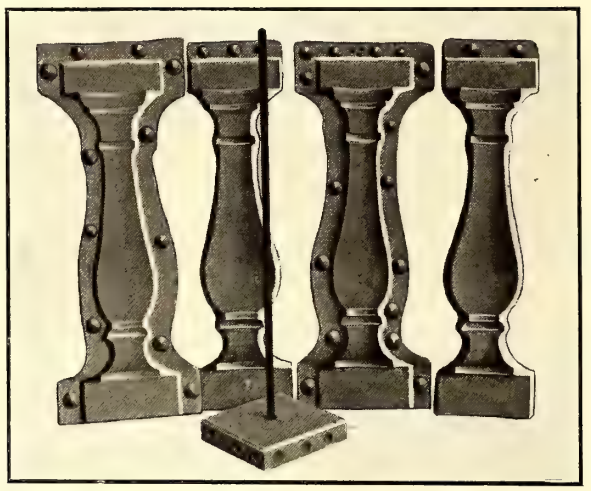


Fig. 13—Section of balustrade mold

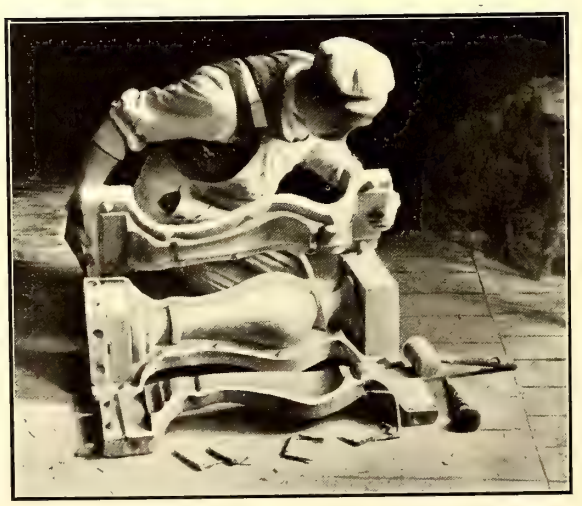


Fig. 15—Removing the mold

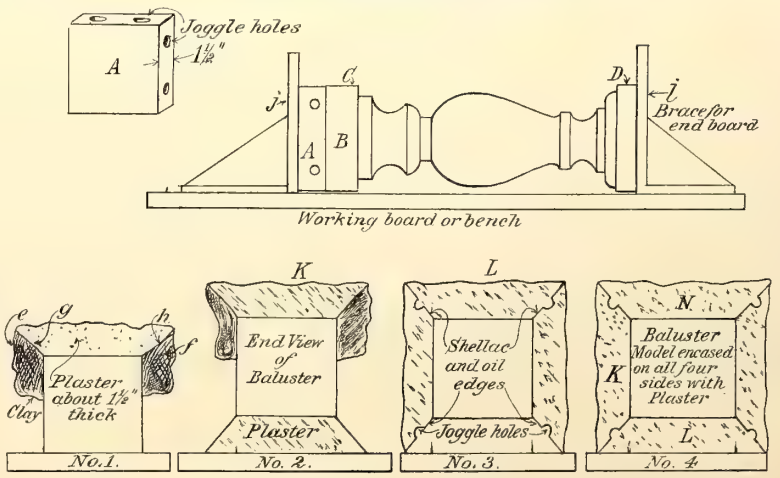


Fig. 16—Mold for concrete balustrade

Now on the cement already placed between the side boards build up more of the mixture until it reaches high enough to be scraped or cut off by the template as it is moved back and forth over the top of the side boards. Keep adding cement to the top of the coping and packing it down, at the same time moving the template back and forth until a good smooth even surface is obtained of the same outline as the cut-out portion of the template or former.

With this method a coping of any desired shape and length can be made at a small expense.

Probably one of the oldest designs of fence, and one that is still popular for certain architectural effects, is the balustrade. This is made up of a number of small pillars set on a base and topped off with a coping, as indicated in the half-tone illustration, Fig. 10. Formerly these balustrades were made of stone or marble, and were used only in the highest class of work, owing to their great cost, due to the fact that each baluster had to be cut out of a solid block or piece of stone.

Fig. 14—Ready to pour

These balustrades are now made of concrete, and are used in places where formerly, owing to their expense, their use was prohibitive. The half-tone illustrations shown in Figs. 12, 13, 14, 15, 16 and 17 show different views of the plaster mold in which the balusters are cast, as well as the various steps in the making of a concrete baluster. The first thing to do in order to make the mold for a concrete baluster is to procure a

model. This can be of either wood, plaster, or stone, or it can be modeled in clay. Perhaps the cheapest way would be to procure from a carpenter or builder a stock model of a wood baluster of pleasing design. This should be well coated with two or three coats of shellac. It should then be oiled and placed on the working bench, as shown in Fig. 16. A square block of plaster *A*, 1 inch to 1½ inches in thickness, to correspond in size and shape to the base *B* of the baluster, should then be made. This should be placed and secured to the end of the baluster at *B*, as indicated. Now take some modeler's clay and place it along the entire length of the baluster from *C* to *D*, as indicated by the shaded portions *e* and *f* in the end view No. 1, Fig. 16. Smooth off the surfaces *g* and *h* of the clay to an angle of about 45 degrees. After having prepared the clay on the model of the baluster, as described above, block up the two ends by placing against them two pieces of board, as shown at *h* and *i*. Now get a fairly large tin dishpan and partly fill it with water, and to this add plaster of Paris, at the same time stirring it well, until the mixture is of the consistency of thick cream. Pour this mixture over the model of the baluster and into the cavity formed by the clay strips and the two end boards. Allow the plaster to set or harden for about ten minutes, after which time the clay and end boards can be removed. Now turn the model over, letting it rest on the plaster shell just cast, as shown in Fig 16. Then proceed as before to cast a plaster-shell on side *K* of the model, using the clay sides and end boards. After the plaster has hardened, remove the clay and boards and turn the model over into the position indicated in Fig. 16. Cut joggle holes in to the angular faces of the plaster-shell, as indicated in the various half-tone illustrations, then shellac and oil these surfaces well. Now proceed to cast section *L* of the plaster mold. After this is hardened, turn the model over again and cast section *N* of the mold, as shown in Fig. 16. Let this harden for from ten to fifteen minutes. Now, if the angular edges of the plaster have been properly oiled as directed, a slight tapping here and there on the plaster-shell will be sufficient to release it from the model of the baluster. The inside of the plaster mold should now be cleaned up and be given two coats of shellac. After drying it should be well oiled with a fairly thick oil to prevent the cement, when casting, from adhering to it. Before assembling the various parts of the mold, a hole should be made in the center of the piece *A*. This hole should be about ½ inch deep and large enough to receive the end of a ½-inch round rod. Each baluster should be cast with a rod of this size running through it, from end to end. This rod not only acts as a reinforcing for the baluster, but it also helps to hold them firmly in place when setting them up in the balustrade. Now assemble the various parts of the plaster mold, and secure them firmly together by irons shaped as shown in the half-tone illustrations, Figs. 14 and 15. To cast the baluster, set the mold on end, as shown in Fig. 14, and fill it with a mixture of 1 part Portland

Fig. 17—Pointing up baluster

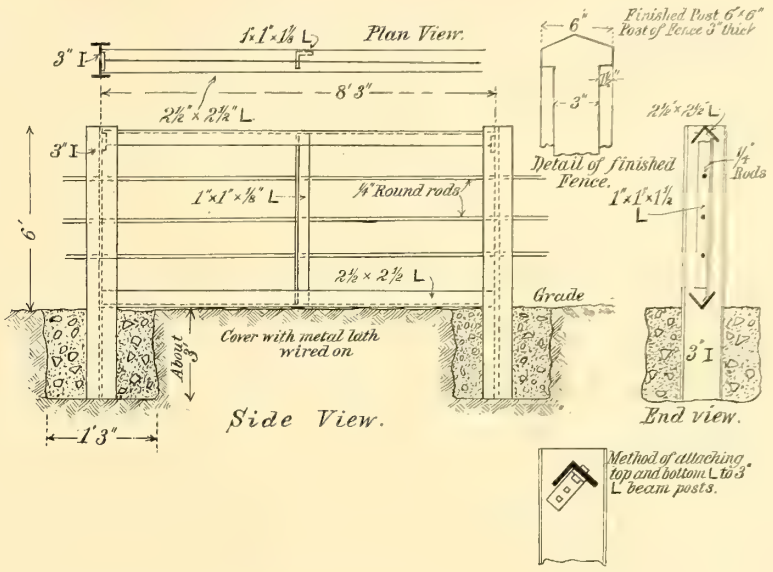


Fig. 18—Details of metal frame and cement mortar fence

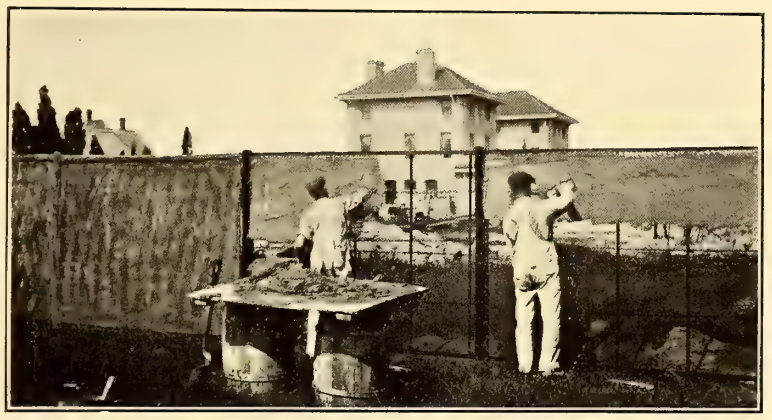


Fig. 19—Progressive operations in the making of a cement mortar fence

Fig. 20—Cement mortar fence complete

cement, 2 parts of sand, and 3 parts of broken stone or gravel not to exceed ¼ inch in size. Mix these all together thoroughly until dry, and then add enough water to this mixture to make it of a creamy consistency, so that it can be poured into the mold from a pail as shown. After pouring, let the mold set on end, undisturbed, for about twenty-four hours. At the end of this time the concrete will be hard enough to allow of the removal of the mold.

Before casting the next baluster, clean and oil the inside of the mold well. If any part of the baluster should have been injured in removing the mold, it can be readily pointed up with a cement mortar made of 1 part Portland cement to 2 parts of sand. Wet the injured portion well before starting to point it up, for if this is not done, trouble will be had in getting the mortar to adhere to the baluster.

The base upon which to set the balusters can be made in a similar manner as described for the making of the low coping, previously explained; but instead of having a curved outline to the top, the base upon which to set the balusters should be made flat. Holes can be made at proper intervals in the top of the base, to receive the ½-inch rods which are cast in the balusters, while the cement is still in a soft state. This will facilitate matters when setting up the balustrade. The coping can be cast in a square wooden mold in any lengths desired in a similar manner as described for the casting of the coping for the lattice panel explained above. In setting up the balustrade wet all part which are to be cemented together, and use a cement mortar composed of 1 part Portland cement to 2 parts of sand.

The combination metal frame and cement mortar fence is used where a good, neat, strong and permanent structure is desired. Its life is practically unlimited, and the cost for maintenance, when properly built, is nothing. No molds or wooden forms are required in its construction. It is made up on a steel skeleton covered with metal lath. In the fence here illustrated expanded metal lath was used. A detail of the steel skeleton or framework is shown in Fig. 18, and in Fig. 19 is shown the progressive operations in the building of the structure. Fig. 20 shows the fence as it appears when completed.

On referring to Fig. 18, a clear idea of how the framework is assembled will be obtained. The posts are made of 3-inch steel I beams, and are firmly embedded in a foundation of concrete 15 inches square by 3 feet deep. As shown, they are placed at 8 feet 3 inches centers, and the total height of the posts from the bottom of the foundation to their tops is 9 feet. The top and bottom rails are made of 2½-inch x 2½-inch steel angles. It will be noticed that the bottom rail is placed with the point of the angle down. The object of this is to relieve the fence, to a large extent, from the upward pressure due to the rising of the ground in the spring time. If the bottom was left flat, as is usually done, a direct pressure would come on it, but by forming it, as shown, the tendency, when the ground rises, is for it to slide off on each side, thus relieving the fence of the direct pressure which it would otherwise be subjected to.

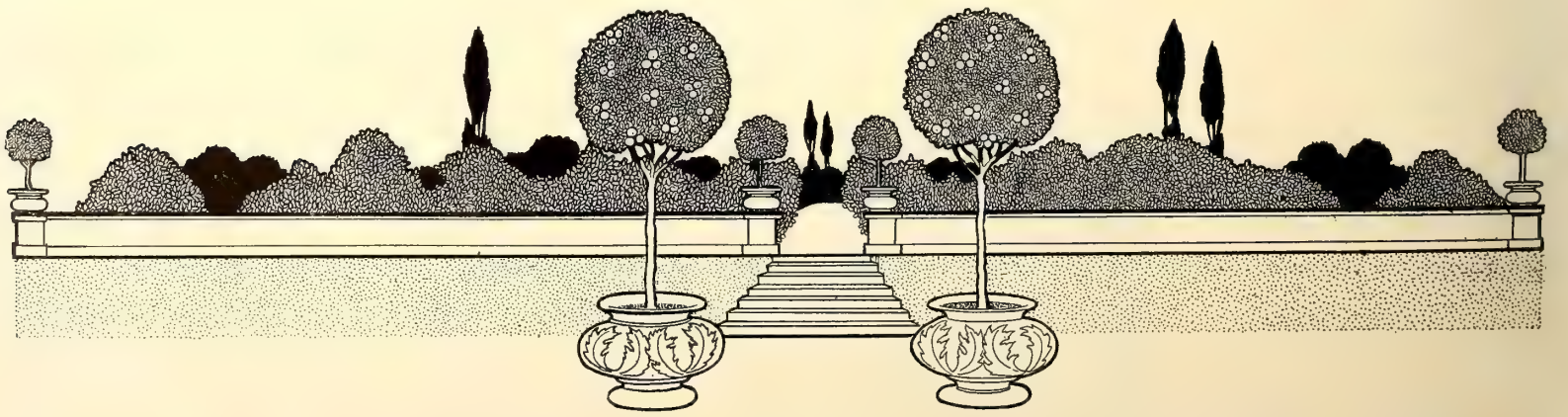
Midway between the posts are secured to the top and bottom rail 1-inch x 1-inch x ⅛-inch angles, and in the center of these angles, as well as in the webs of the I beams used for the posts, are provided three ⅜-inch holes, through which are inserted three ¼-inch round steel rods.

After this framework is set up, metal lath is wired to it, as shown in Fig. 19, and the steel skeleton is then complete and is ready for the application of the cement mortar.

The first coat of cement mortar should be made up of 1 part Portland cement to 2 or 3 parts of fairly coarse sand, and should contain a sufficient amount of long cow or goat-hair to form a good key. The first coat should be applied to the thickness of about 1 inch, and its face should be well scratched to make a good key for the second coat to bond to. After this coat has been applied to one side of the lath and has become hard, the reverse side of the fence, the surface of which will appear very rough, should first be thoroughly saturated with water and then be plastered, to a like thickness, with a mortar of the same composition, except that the hair should be omitted. The posts should be treated with mortar in the same manner as the panels, forming them into shape as the work progresses. The finishing coat can now be applied to both sides. The cement mortar for the finish should be of the same proportion as used for the first coat; but before applying it, be sure to saturate the first coat with water, for if this is not done, a good bond between the first and finish coat will not be obtained. The top of the fence can be finished off square or a coping can be placed on it, as fancy dictates. If a coping is desired, it can be cast separately and set in place, or it can be run in place in a similar manner as previously explained for making a low coping.

The surface of the fence can be finished with any one of the artistic surfaces which are possible to obtain with this material, such as a rough or smooth surface, slap dash, pebble dash, or rough cast. Even some color can be incorporated, if so desired. The dimensions for the framework, as well as the construction of the frame as given in Fig. 18, are of a specific case, and are given more as a suggestion as to what can be done along these lines rather than to follow in detail.

The general principles given for the construction of this type of fence can be modified to suit any size or shape of fence demanded by the various conditions that may arise.



The Interior Details of the Bungalow and Its Furnishings

By Kate Greenleaf Locke

BETWEEN the bungalow in its present stage of development and the cottage I would draw many distinctions, and if we are to evolve it in the completeness of its beautiful possibilities from our present architecture we must clearly define the characteristics which make it something separate and apart from the ordinary cottage.

We should also insure that these features are embodied in its construction: The living-room, for instance, in a bungalow serves in many cases as an entrance, parlor and reception-room combined, the type of house permitting an unconventional style of living; this is as it should be, and it is certainly convenient and economical, but in it the cosy seclusion of cottage-parlor is impossible.

In the search for something that will satisfy a man's need of beauty in his home surroundings, his craving to live in "good style" (a craving which does not desert him because his income is small), we arrive at the bungalow. To have the charm and beauty of his home impress the visitor who enters it is the natural and most wholesome ambition of many men and women, and the commonplace cottage, with its mill-made doors and windows turned out of the same mold with hundreds of others, does not satisfy this ambition. The bungalow may be made to satisfy it.

Fig. 1—Ordinary window arranged to give a picturesque effect

On the inside, as on the outside, there should be evidence of a rough-hewn hard finish to the woodwork, and while this has an expensive sound, as hand-work usually costs more than machine-work, it is not so in this case. The finish is so simple and so rustic as to take little time to accomplish it. The wood is stained and often left without further treatment, though it is sometimes rubbed down with oil, which deepens the color, or it is painted dead-black without varnish, a simple matter and a cheap one, but very effective. The beams of the ceiling are often rough-hewn, the grilles are of flat slats or of lattice-work, and there is a marked absence of turned-work and no polished surface except upon the floor.

Cement and terra-cotta floors are most effective and picturesque in the living-rooms and dining-rooms of bungalows, and are found to be as comfortable and as easily warmed as any other sort when they are overlaid with thick rugs. The cheapest floor which carries a good effect is an ordinary plank flooring planed down and painted smoothly with several coats of the best paint, or stained a dark brown and shellaced, in which latter case the shellac and a slight stain

Fig. 2—A mantel of red brick and stained wooden walls

will have to be renewed at least once a year. When the flooring is a poor one the cracks should be filled in before the paint is applied. Still less costly is a floor covering of Japanese or Chinese matting laid over several thicknesses of newspaper and tacked tightly and smoothly. When small rugs are laid on the matting it forms a background for them which is pretty and durable. Wool terry, or filling in plain colors, should also be laid over floor-paper or many thicknesses of newspaper and tightly fastened down. This gives a background of dull blue, soft red, green or brown, and may be used effectively with or without rugs.

Walls paneled to the ceiling, as in Figure No. 5, with stained wood or wainscoted up four feet on the side-walls, ceiling-beams with sand-finished plaster between them, inglenooks at the fireside, brick or stone chimneys built in the room with projecting chimney-breasts, are frequent fixtures of a bungalow interior.

It will be recognized at once that these things sweep away all possibility of an ordinary or commonplace effect, and substitute one of individual beauty and picturesque charm. In the use of these delightful accessories to the builder's art there is a field for much artistic feeling to express itself, but there is also great danger of overstepping the line of beauty

Fig. 3—A beautiful color scheme in old rose and brown stained wood

Fig. 4—A Dutch window in

that edges simple, rustic art and falling into eccentricities. There are certain conventions which should govern here, as well as in the building of a Colonial, or an Italian, or an early English house. If we are formulating an architecture which is to be purely American (and the bungalow-cottage has been evolved from the East-Indian bungalow to suit American necessities), let us do so on lines which are strong and lasting. The interior of a bungalow should be picturesque but never queer. (Figure 1.) The chimney-breast may be broad and hospitable, but it should not be huge. The front door should be made on lines that differ distinctly from the conventionally accepted idea, but it should not be so large and heavy as to be disproportionate to the house; its hinges of wrought-iron and its knocker should not be so aggressively massive as to suggest the defence of a feudal castle (Figure 10); its electric-light fixtures and other hardware may very appropriately be made also of iron, but the heavy chains supporting great metal balls that are often seen hanging in the center of a low-ceiled room look menacing and ridiculous.

In the planning of a bungalow the chief outlet for one's taste and originality lies in its windows. These may be French, English (Georgian) or Dutch. All of these types are casement in construction and are, therefore, far more picturesque than the mill-made windows which slide up and down. The casements of a bungalow should always be hung to swing outwards, as this way they do not interfere with the inside space. (Figure 2.) Ordinary mill-made windows may be so arranged in the design of the house as to give a picturesque effect by placing them in groups and curtaining them effectively. They may also be much improved by building a four-inch shelf above the casing and dropping the drapery from the projection, or by running a wide shelf flush with the sill. This latter device gives an effect of thick walls with a wide windowsill and is a great addition to the beauty of a room when ferns or other potted plants are placed here.

The French window is always beautiful, in fact, it adds so much in beauty and elegance of effect to a room that it is supposed to be expensive when it is not. It costs little more to cut a window to the floor than to have it stop some feet above, and the casements may have the stock-panes of

Fig. 6—The inglenook is the feature of this living-room

Fig. 7—A living-hall in

lcove of a bungalow living-room

Fig. 5—A dining-room paneled in white enamel battens

cheap glass and yet, when curtained with muslin, chintz or raw silk, be all that could be desired. (Figure 9.)

In illustration No. 9 we have French windows opening from a living and dining-room. Curtained with beautiful chinz in wistaria pattern they give much charm to the simple room.

There seems also to prevail an erroneous impression that French windows are not suited to a cold climate. This depends entirely upon whether they are well-built and carefully fitted; and, undoubtedly, they add a double portion of sunshine to the room within.

In order to appreciate the real value of the present fashion of fitting up and furnishing the modest house of to-day, which is represented by a cottage or a bungalow, let us contrast it with the typical house of twenty years and more ago. The sitting-room in those days (the living-room was then unheard of) was often small; to have made it large and airy, with French windows or casements, with an archway opening to the dining-room, with an alcoved fireplace, would have been to have struck at the traditions which governed the building of the cheap house and would have scandalized the public. I may safely state that, generally speaking, it was something in this wise: A room 12 x 18 feet had plain walls of white smooth plaster; or if papered, the color was dark of a mixed pattern in a calico design which was utterly impossible as a background for pictures and totally without beauty of its own. The woodwork of pine was grained to represent some impossible wood, generally light oak, and was highly varnished. The four uncompromising walls of this room were utterly devoid of a break or irregularity of any kind and rendered the room as characterless as the inside of a pasteboard box. The thin walls had shallow windows, often unrelieved by shelves or draperies; if curtains of Nottingham or other lace were used, they accentuated the thin, flat effect of the mill-made windows. These bleak, unhappy windows have small resemblance, with their somber shades of green cambric, to the pretty diamond-paned casements of to-day, where a curtain of soft silk (at 39 cents a yard) or of flowered cotton, or denim, with rod and rings is drawn across the window-space, where a shelf below holds ferns and geraniums and where a wide-cushioned bench offers a lounging-seat. It is a matter for wonder that

tory-and-a-half bungalow

Fig. 8—A harmonious dining-room and living-room of a mountain bungalow

Fig. 3—A beautiful color scheme in old rose and brown stained wood

Fig. 4—A Dutch window in the alcove of a bungalow living-room

Fig. 5—A dining-room panelled in white enamel battens

that edges simple, rustic art and falling into eccentricities. There are certain conventions which should govern here, as well as in the building of a Colonial, or an Italian, or an early English house. If we are formulating an architecture which is to be purely American (and the bungalow-cottage has been evolved from the East-Indian bungalow to suit American necessities), let us do so on lines which are strong and lasting. The interior of a bungalow should be picturesque but never queer. (Figure 1.) The chimney-breast may be broad and hospitable, but it should not be huge. The front door should be made on lines that differ distinctly from the conventionally accepted idea, but it should not be so large and heavy as to be disproportionate to the house; its hinges of wrought-iron and its knocker should not be so aggressively massive as to suggest the defence of a feudal castle (Figure 10); its electric-light fixtures and other hardware may very appropriately be made also of iron, but the heavy chains supporting great metal balls that are often seen hanging in the center of a low-ceiled room look menacing and ridiculous.

In the planning of a bungalow the chief outlet for one's taste and originality lies in its windows. These may be French, English (Georgian) or Dutch. All of these types are casement in construction and are, therefore, far more picturesque than the mill-made windows which slide up and down. The casements of a bungalow should always be hung to swing outwards, as this way they do not interfere with the inside space. (Figure 2.) Ordinary mill-made windows may be so arranged in the design of the house as to give a picturesque effect by placing them in groups and curtaining them effectively. They may also be much improved by building a four-inch shelf above the casing and dropping the drapery from the projection, or by running a wide shelf flush with the sill. This latter device gives an effect of thick walls with a wide windowsill and is a great addition to the beauty of a room when ferns or other potted plants are placed here.

The French window is always beautiful, in fact, it adds so much in beauty and elegance of effect to a room that it is supposed to be expensive when it is not. It costs little more to cut a window to the floor than to have it stop some feet above, and the casements may have the stock-panes of cheap glass and yet, when curtained with muslin, chintz or raw silk, be all that could be desired. (Figure 9.)

In illustration No. 9 we have French windows opening from a living and dining-room. Curtained with beautiful chinz in wistaria pattern they give much charm to the simple room.

There seems also to prevail an erroneous impression that French windows are not suited to a cold climate. This depends entirely upon whether they are well-built and carefully fitted; and, undoubtedly, they add a double portion of sunshine to the room within.

In order to appreciate the real value of the present fashion of fitting up and furnishing the modest house of to-day, which is represented by a cottage or a bungalow, let us contrast it with the typical house of twenty years and more ago. The sitting-room in those days (the living-room was then unheard of) was often small; to have made it large and airy, with French windows or casements, with an archway opening to the dining-room, with an alcoved fireplace, would have been to have struck at the traditions which governed the building of the cheap house and would have scandalized the public. I may safely state that, generally speaking, it was something in this wise: A room 12 x 18 feet had plain walls of white smooth plaster; or if papered, the color was dark of a mixed pattern in a calico design which was utterly impossible as a background for pictures and totally without beauty of its own. The woodwork of pine was grained to represent some impossible wood, generally light oak, and was highly varnished. The four uncompromising walls of this room were utterly devoid of a break or irregularity of any kind and rendered the room as characterless as the inside of a pasteboard box. The thin walls had shallow windows, often unrelieved by shelves or draperies; if curtains of Nottingham or other lace were used, they accentuated the thin, flat effect of the mill-made windows. These bleak, unhappy windows have small resemblance, with their somber shades of green cambric, to the pretty diamond-paned casements of to-day, where a curtain of soft silk (at 39 cents a yard) or of flowered cotton, or denim, with rod and rings is drawn across the window-space, where a shelf below holds ferns and geraniums and where a wide-cushioned bench offers a lounging-seat. It is a matter for wonder that

Fig. 6—The inglenook is the feature of this living-room

Fig. 7—A living-hall in a story-and-a-half bungalow

Fig. 8—A harmonious dining-room and living-room of a mountain bungalow

Fig. 9—French windows are the feature of this bungalow

these pleasing accessories, which cost so little and add so much to the enjoyment of a home, were not used even then, but they evidently were not thought of and have come as an inspiration to the house-builder of to-day.

Contrast the funny little mantelpiece of wood, painted to represent black marble, or the yet greater horror of black iron holding a tiny basket-grate for coals, with the wide, yet simple, fireplace in which gas-logs, wood, or coal, may be burned, in the up-to-date house. Here the grate-basket is upheld by andirons, the broad chimney-breast is faced with bricks or tiles whose soft color warms the room. To-day a plain, heavy shelf of wood supported by the simplest of wooden beams often forms the mantelpiece, and in some cases the facing about the fireplace is merely of rough plaster, colored to correspond with the tone of the walls.

A beautiful and original effect is sometimes secured by imbedding the beams above the wainscoting and those that border the ceiling in the plaster so that their flat surface is flush with the plaster. (Figure 6.)

The color-scheme in a living-room I know is as follows: Walls paneled in brown wood, the ceiling beamed, with rough plaster, the beams washed with pumpkin-yellow. An alcoved fireplace with seats in the inglenook has cushions of brown cotton velvet, relieved with pillows of raw silk in pumpkin-yellow.

Fig. 10—A simple room showing good taste and refinement in the furnishings

Fig. 11—A living-room in good taste

The rugs on the polished floor hold rich, soft colors, and the curtains in the beamed opening, which gives to the hall, are of yellow brocade. These curtains, which form the keynote of the room's furnishing, are not inexpensive, yet they cost far less than doors would have cost in this opening. The windows are set at the top with a latticed grille of brown bamboo about two feet wide; behind this lattice raw silk in pumpkin-yellow is fluted closely, while straight scarfs of the silk depend from the lattice to the sill and frame the window.

A quiet influence is now at work, which shows in plain walls, in the dull finish of woodwork, in dark wainscots, and the plain strong lines of the wood-finish of the house.

In Figure 5 we have rustic simplicity carried to its extremest effect, and yet the result is good. The Colonial rag rugs are used on the floor, and the roof is not even ceiled in with wood. Hickory chairs are the only kind in evidence, and the one bit of strong color which breaks the wooden uniformity is seen in the gay little curtains of flowered calico which are hung over the buffet. However, the rough-hewn book-shelves on the right of the picture evidently hold volumes that are beyond price, and this picture speaks for the argument I have been endeavoring to put forth, that the bungalow stands for the new movement towards a simple life which is not incompatible with refinement, beauty and culture.

Figure 4 shows an alcove with three little Dutch windows and a wide brick fireplace. Under the basement-windows beside the fireplace, book-shelves are built in.

Figure 7 is a bungalow-hall which contains a particularly good suggestion for a staircase and window. Here the entire space under the stairs is filled in by diamond-paned windows which lighten and brighten what would otherwise be a dark corner, and the latticed panel which forms the stair-rail is a charming design.

It is an unfortunate fact that in many bungalows which are thoroughly good throughout until we reach the lighting arrangements, the electric fixtures are atrocious. One fairly shudders over the bad taste which is shown in them. Great heavy iron cables dangle over our heads and metal-bound lamp shades, so large as to be out of all proportion to the architecture of the room, depend from them. This is an obsession and will pass, but it is to be deplored while it lasts.

The matter of appropriate fixtures for electric lights is an unsettled one as yet, as far as the bungalow and the modern nondescript house is concerned. The Colonial, the French and the medieval English houses have each settled it most satisfactory for themselves. The recognition that a fixture may be beautiful and yet unobtrusive will go far toward settling it for the bungalow. The taste for a purely rustic finish which has taken hold of the bungalow builders in many instances is strongly shown in illustrations Nos. 8 and 11. In these two houses is shown that wonderful union of the crudest materials with rugs, draperies and furniture that are valuable because of their superior workmanship and finish. Especially is this so in No. 8. There the finest china and silverware are made to show up charmingly against a background of rough-hewn wood, rich Oriental rugs lie on an unstained floor and expensive chairs of carved wood and leather are used with good effect in this rustic dining-room. The electric-light fixture here is a particularly artistic one.

Making Soil

By E. P. Powell

EXTENSIVE farmers have methods for rendering their soil fertile by plowing under clovers, vetches, etc. These same farmers do not know that they are also creating soil. The most important part of what they are doing is not adding a fertilizer, but increasing the quantity of soil which they own. Alfalfa or clover that is plowed makes a mass of humus, and this slowly undergoes chemical change and physical change until it is added to the bulk of the soil. Now, what we need in our country homes most of all is a knowledge of how to make soil. A large majority of our little homesteads are not over-rich in what land they do have, and the land itself is limited—probably not more than half an acre for fruit and vegetables. The owner ought to know how to make this exceedingly productive, and instead of decreasing it he ought to add to it and to its fertility every year. This can be done almost anywhere, and done with ease.

One of the simplest possible ways for increasing garden soil is the planting of legumes. Beans may be planted over and over in the same spot and will add to the nitrogen, needing only a little potash and a trifle of phosphate. But if corn is planted repeatedly in a corner of the garden it exhausts corn-food, and you will, in the course of three or four years, get stalks one-half size only, and ears accordingly. Now, the proper thing to do just as soon as you buy a place is to begin to accumulate soil-stuff. Put this all into piles, and you will be surprised to find how rapidly the piles grow. On clay-soils you can get hardly anything better than coal-ashes, and this is generally thrown away by the ton. I advise you to get it as largely as possible. You may mix with it all of the barnyard manure that you have, add autumn leaves in great quantities, weeds and waste, roads scraping and ditch accumulations, old lime, in fact, accumulate almost anything that will decompose in the course of twelve months. In some cases it is well to add lime, but this is not certainly needed. If you can run your autumn leaves through the stables as bedding, it will get a richness of great importance. It will need about six-months' composting of this sort of material to prepare it for forking or plowing under. Remember that we are not now after a fertilizer or manure so much as we are after more soil.

In Florida we fill trenches or deep furrows with this sort of material, then throw over with the plow a covering of dirt, making a slight ridge. In this ridge we thrust the cuttings of sweet-potato vines and the results are very far ahead of anything that can be secured from high-grade fertilizers. Even pine-needles are useful, because they help to hold the moisture and in that way feed the growing vegetables. If you have a very small place, all the more reason for saving material. You can make it immensely rich and productive inside of four or five years. On a five-acre lot you can easily be accumulating, annually, two or three compost piles. You wll be astonished at the material that generally goes to waste; part of this being destroyed by fermentation, as in an ordinary manure pile, and another part drying away or evaporating. If you will connect your kitchen sewerage by drain-tiles, with one of these piles, and save the slops, you will find that you are adding richness. It is much better to compost your privy waste, and this you can easily do, even if you have no bathroom, by carrying it through five or six-inch tile, that can be frequently flushed. You will find this a much more sanitary method than even the Waring system—a good system generally for getting rid of wealth, but it is not a good system for saving wealth. Beside this it frequently overchanges the soil and poisons it, killing trees as well as tainting the air. From your compost-pile there will be little or no exhalation, while the result can be plowed under as soon as it is spread upon the land.

In other words, just as soon as your property comes into your possession, study it for this one thing, how to make the most soil, and at the same time enrich the soil that you have. These two problems are really one.

Homes of American Artists

"Fleetwood," the Residence of Robert V. V. Sewell, A. N. A., Oyster Bay, Long Island

By Barr Ferree

THE personal interest the owner and creator of a dwelling may take in his house assumes various forms. Sometimes it is exhibited in going to the most expensive architect—that is, the architect who makes a specialty of designing the most expensive houses; sometimes it is shown in liberal orders to the upholsterer; sometimes the landscape gardener and the florist have the first call; sometimes it is in the purchase of works of art for the adornment of the interior; sometimes it is in the maintenance of costly stables and other outdoor luxuries that call for the expenditure of a prodigious sum of money and which require great areas for their successful cultivation and enjoyment.

It is seldom, indeed, that an owner of a house will take sufficient pride in it to himself largely contribute to its decorative parts through his personal labor. This may, it is true, be expected of the architect, who will, when he builds, design his own dwelling; in a lesser extent, and in a very different way, it may be expected of the painter, who may confidently be looked to in the providing of painted decorations for the interior, and who will give to the inside of his house that personal touch and regard for beauty that cannot be expected in dwellings furnished by contract, even if no apparent limitation in cost be set. But that a painter should, for the greater beauty of his house, transform himself into a sculptor, fit it and adorn it with carvings and sculptures executed by his own hand, is so rare and unusual as to be practically, if not actually, unique. And that is precisely what Mr. Robert V. V. Sewell has done in his charming place "Fleetwood" at Oyster Bay, Long Island.

The house stands serenely back some little distance from the street, but not so far as to present a sense of aloofness or a desire for privacy; on the contrary, it is cordially placed a little beyond a hedge of juniper, hospitably broken in the center by an arch of the same tree. A pleasant stretch of lawn lies behind the hedge, with, to the right and left, great cylinders of arbor-vitae, ancient fragments now being lovingly tended into newer shape and growth.

Then the house, presenting what is apparently an end to the street, since the gables face the flanks on either side. Yet this is the entrance front, as is disclosed by the porch in the center, beneath which is the main doorway. The first story is built of Harvard brick; the upper is in half timber, the panels showing the soft gray of the cement, and the wood of oak, dark stained. The roof is of slate, and is of much importance, since slates of various colors were chosen, then mixed promiscuously and applied as they came to hand. The result is wonderfully soft and beautiful, with a blending of delicate colors that is immensely attractive. To the right, as the house is approached, is the studio, a graceful addition not seen in the photograph which was taken before it was begun. It has but one story and presents its gable end to the street.

The architect's part in the designing of this house was precisely that which any architect would take in work of this description. The plan, the construction, the outward form, even the character of the building is his, and entirely his. But Mr. Dunham Wheeler, who was the architect here, had the signal advantage of the ornamental co-operation of the owner; for the great artistic interest of the house is in the carvings of wood, not only designed by Mr. Sewell, but personally executed by him.

It is these carvings that give the real distinction to the house, embellish it and decorate it, and give it rank among notable dwellings in America. Mr. Sewell would, doubtless, be himself the first to disclaim any artistic preeminence for these carvings, but he would not, I fancy, deny their complete uniqueness in modern building. For it is especially to be noted that he has not simply applied his decorative adjuncts to his house, hung them on, as it were, so they would be taken off

Quiet walls above the peaceful garden

The terrace and garden

and the fabric left complete; but he has made them an integral part of the structure, so that the house would be as incomplete without the carvings as the carvings would be meaningless and homeless without the house.

We have here, in short, a fine case of an artist putting into practical form his own favorite ideas and theories. Few periods of art have had stronger attraction to Mr. Sewell than the closing centuries of the medieval period, the fifteenth and sixteenth centuries. When he came to build his house at Oyster Bay he not only resolved to apply these theories practically, but to give them real and definite form. His basic idea was a medieval house; that is to say, a house designed on medieval models and yet adapted to modern use. The general architecture and design of the house is thus handiwork; but he has carved these pieces of wood much as the medieval craftsman might have carved them, and added them in the fine old spirit of structural decorations, meritorious in themselves it is true, but conceived and carried out in the old decorative spirit. No craftsman in America has done finer work than this, nor applied his art in a more practical way. It is a monument alike to the artist's own abilities and to the wisdom and beauty of his theories.

The larger front of the house adjoins the entrance front on the left. Here, it is discovered that this quiet little dwelling, as it appears from the road, is a house of generous dimensions. There are two gable ends here, one at each end, with a pleasant stretch of wall between them. The

The porch and hand-carved brackets of the entrance-front

based on the modest country house of the close of the fifteenth century.

But mere forms and generalities would not suffice for this enthusiastic artist. His house must not only recall medieval architectural forms, but be embellished with decorations conceived and carried out in the true medieval spirit. Hence, these wood-carvings, these sculptured doors, these interlaced barge boards at the gables, these strange weird brackets upholding the overhanging second story. Behold, then, a modern house, designed and decorated in the spirit of the medieval craftsman, a real example of craftwork in modern building that is as unique as it is beautiful!

And the beauty of the whole thing is that here is a house occupied by the owner who has decorated it himself precisely as he wanted it decorated. He does not offer these carvings as sculptures—as carefully studied works possessed of the delicate value that may be looked for in the sculptor's upper wall, in this connecting screen, is without the vertical uprights of the entrance front and main gable, and is a solid stretch in which are cut windows of various size, all quite close to the overhanging eaves, but each having its own natural place in the economy of the interior. Each end, with its gable, projects beyond the connecting wall, and the intervening space forms a terrace, giving upon the garden without, and provided with a door that opens into the dining-room. Like the entrance door, this terrace door is charmingly carved in a highly decorative manner, and is a worthy companion-piece to the larger door on the front.

The garden beyond is intimately related to the house, for the terrace that overlooks it is scarce more than a step above the bounding walk. First comes a flower border of perennials, gaily flowering just outside the house. Here, growing up at intervals, are fine old junipers, rarest of trees to transplant in this region, yet boldly transplanted thither

A glimpse of the house with its well designed garden

by Mr. Sewell. Beyond is a formal space, pivot-bordered, divided within into rectangles open to the center. Quite in the middle is a small circle, with a great rounded box-tree. A rose-bordered path goes out from this to a friendly hemlock tree, outbordered by junipers and walnuts and evergreens on either side. Not far off is the ripple of the stream from the great pond that lies above and behind the house. It is very beautiful here, and

A true artist's home decorated by its owner

The main door

The terrace door

The hall, with its paintings and hand-carved furniture

growing more beautiful every year. For the hedges and flowers are vigorously a-root, and each year brings a newer rich growth that enhances the loveliness of the whole.

Mr. Sewell's property is quite considerable in extent, comprising as many as sixty acres. But he has wisely chosen to centralize his cultivation in and about his house, and much of the land is, as it has always been, wild land. The pond which has been created by an ancient dam, is literally surrounded with forest growth, great trees rising up from its very margins. And beyond are trees and woods, with rough old paths and roads running through them in the haphazard but still adequate way that old roads have always wandered through the quiet stretches of the land. It is ample, surely, for this woodland shelters many an artist's bower and gentle retreat that no cultivated grace could add to or make more ravishing than Nature herself has done.

Cabinet designed and carved by R. V. V. Sewell

We sat under the hemlock tree, Mr. Sewell and I, and he told me of some of the ideas he had endeavored to illustrate in his house. "The basic idea," he said, "was to express the taste of the fifteenth and sixteenth centuries, the period when the decorative arts were at their finest stage. Small workmanship and realism had destroyed the true spirit of these arts, which was to embellish the structure rather than to display technical craftsmanship. Having decided on the sixteenth century as a period, I naturally wanted to carry out the idea consistently so far as decorative handicraft went. Thus, the carved woodwork is not intended to show proficiency in technical detail, for it does nothing of the kind, but to show how the medieval carvers applied ornament to architectural structure, that is, carving at once appropriate and well-applied to the building.

"The garden," he continued—and we were just without it—"shows the medieval formality and intimacy in relation to the home. There is no Americo-Italian formalism here, but just that quiet and calm which seems to be inherent to the medieval garden. But inside," he added, as an afterthought, "there is no medievalism above the first story. On the main floor we have a large hall, such as any medieval house would have, and our dining-room is a separate and distinct apartment; but in the bedrooms and arrangements of the second story we are entirely modern, at least, as modern as we can be."

One enters the great hall directly from the main doorway. There is no intervening vestibule, for none appears to be needed. So we went into a great room that seemed to occupy the whole house, as indeed it does on the street side. It is lighted from the front with spacious windows of leaded glass, each frame having in the upper part a square of glass decorated in colors. The wall at the left end is closed; at the right is an opening to a passage that leads directly into the new studio, which is furnished with an open timber roof whose beams are upheld on corbels, heads modeled by Mr. Sewell and cast in cement. Directly in face, in the hall, is a magnificently carved chimney-piece, designed and carved by Mr. Sewell, a sumptuous piece of work. On either side are archways; to the left opening into the dining-room, to the right, closed doors to a coat closet, with the stairs beyond. The walls are coated with cement, left in its natural beautiful gray, and the ceiling is beamed with wood-lining between the closely set joists.

Simply as an architectural arrangement this room would excite interest, so fine are its proportions, so good its color, so appropriate the bare structure of the ceiling. But it has been greatly enriched with art works by Mr. Sewell and his accomplished wife. Around the upper walls are many of the original colored sketches of the great decorative frieze of the "Canterbury Pilgrims," painted by Mr. Sewell for Mr. George J. Gould's "Georgian Court" at Lakewood. These sketches are, of course, much smaller in size than the final painting, but are highly decorative and are here admirably utilized. Just below them, on the end wall, hang two portraits painted by Mrs. Sewell, and between them is a great cabinet carved by Mr. Sewell. Most of the furniture is his, also, including many handsome chairs, the great table in the center and other pieces. Other of his decorative paintings are used for the wall decorations, so that the general effect of the room is one of splendid color and richness. There are few finer rooms than this anywhere. There is no overdone furnishing, as often happens in costly homes. There is none of the mixture of the studio as might be looked for in an artist's home.

Colonial Fireplaces and Fire-Irons

By Mary H. Northend
With Photographs by the Author

BARE and unattractive as were many of the rough homes constructed by the early settlers in this country, nevertheless, they possessed, almost without exception, one feature of comfort and cheeriness which is sadly lacking in modern homes. This characteristic feature was the enormous open fireplace with its huge logs and high-backed wooden settles around which the family life of the sturdy pioneers centered.

In those primitive days, when coal and stoves were alike unknown, the open fire was relied on not only to heat the house, but to cook the food as well. The fireplace was generally located in the main apartment, which served as kitchen, dining-room and parlor combined, and sometimes also as a sleeping-room. Through lack of other material, or of sufficient means to purchase it, they were often built of roughly hewn rock or field-stones found not far from the cabin. These stones were piled up wall-fashion and chinked with mud and clay in place of mortar.

In size, some of these old Colonial fireplaces were veritable caverns, for it required a tremendous fire during the cold, stormy winter months to warm one of those roughly built houses with the chill wind penetrating between the logs and around the ill-fitting doors and windows. Then, too, there must be room for the big kettles and pots, in which the cooking was done, to hang from the stout stick of green wood or the iron crane that was arranged for that purpose.

Such open fires as warmed those hearths would be extravagant luxuries in these days of high-priced fuel, but at that time there was an abundance of wood to be had for the chopping. Huge back-logs, sometimes measuring ten feet in length and two in diameter, occupied the back of the fireplace, serving to throw the warmth out into the room and at the same time to prevent the stonework from becoming too hot. A smaller log, known as the fore-stick, was placed at the front, raised a few inches from the hearth by fire-dogs. Smaller sticks were then piled in between and the kindlings of dry pine and shavings were lighted by means of flint, steel and tinderbox, or coals brought from a neighbor's hearth. Once kindled, the fire was rarely allowed to

Colonial fireplace in the house of Ross S. Turner, at Wilton, New Hampshire

Antique fire-dogs found in Salem, Massachusett

go out, but was continually supplied with logs or kept alive by glowing coals of peat buried in the ashes.

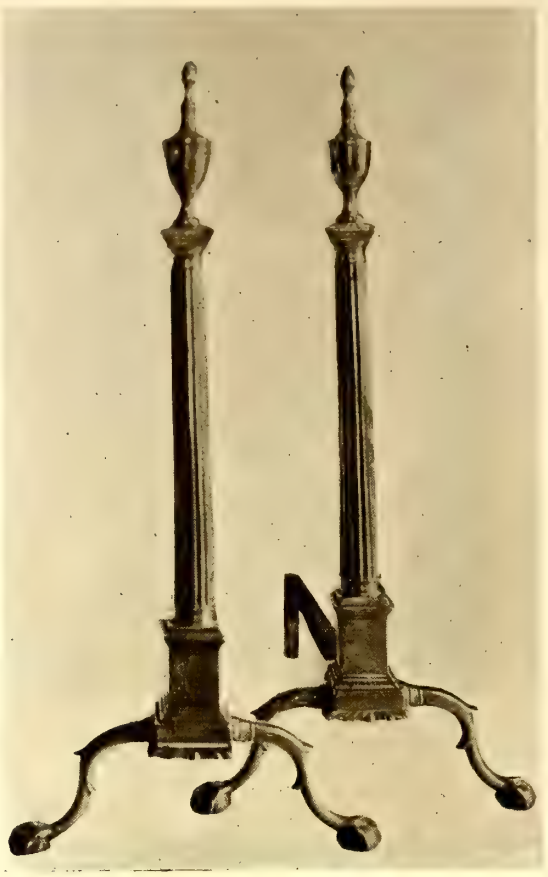
The quaint old fire-dogs, which supported the wood, leaving space for the draught underneath, were so called because of the grotesque animals' heads which ornamented them. The word "andirons," applied to supports of differ-

An old-time fireplace at Ipswich, Massachusetts

ent designs, is really a corrupted form of the term "hand-irons," although the name "end-irons" is also found in some early inventories. In addition to the large andirons for the heavy logs, smaller ones called "creepers" were often used to support the short sticks.

As time went on and the colonists found themselves growing more well-to-do they began to build more substantial homes. The number of rooms was gradually increased, and when the kitchen came to be no longer utilized as the principal room in the house, the number of fireplaces grew larger also. But the fireplaces themselves began to decrease in size. There was no longer any need of such huge fires to keep comfortable, for in the new houses there was little chance for the biting wind to enter. Then, too, wood was not so plentiful as it had been at first and the enormous back-logs were not so readily available as in the earlier days.

So it happened that by the middle of the eighteenth century the great, yawning fireplaces had given way to those of more moderate proportions. Some of the early ones were still in use, it is true, but the majority of these had been partially filled in with brick and mortar in order to conform with the demands of economy and the prevailing fashion.



Fire-dogs in the fireplace of Saltonstall House at Haverhill, Massachusetts

About this time the brick oven was introduced in connection with the kitchen fireplaces. These ovens were roomy affairs generally situated at one side of the fireplace. Early in the morning of baking-day a brisk fire of wood was kindled in the oven and was allowed to burn until the bricks were thoroughly heated, usually about two hours. The coals were then taken out and the Saturday array of brown-bread, beans, Indian pudding and pies were transferred to the oven and left to be baked by the slow, even heat. The delicious flavor imparted by this process lingers tantalizingly in the memory of those who have eaten food cooked in this way, for as yet nothing has been found that can compare along this line with the old-fashioned brick oven of our grandmother's day.

Another bit of kitchen furnishing that dates back to the time of the open fireplace is the tin kitchen. With its shelves laden with pies and bread this odd little tin cupboard was drawn up in front of the blazing fire and allowed to remain there until the food was thoroughly cooked by the heat thrown out by the fire and reflected by the convex tin hood. Cooking was also done in kettles suspended over the blaze from the stout iron crane by means of pot-hooks or trammels. The long-handled frying-pan, the baking-pan supplied with legs so that it might be set directly among the embers, and the roasting-spit were also included among the culinary utensils which every well-to-do housewife of the fireplace era possessed.

With the advent of the smaller fireplaces came the decorative mantel and the more elaborate fittings. Indeed, so important a feature did the ornamental chimney-piece be-

Fireplace in Saltonstall House, at Haverhill, Massachusetts

Fireplace in an old Salem house

come that Isaac Ware said of it in the year 1750: "With us no article in a well-furnished room is so essential. The eye is immediately cast upon it in entering, and the place of sitting down is naturally near it. By this means it becomes the most eminent thing in the furnishing of an apartment."

Many of these mantelpieces were of wood beautifully carved in elaborate designs. Others were somewhat more simply ornamented and were surmounted by fine paintings or beautiful old-fashioned mantel mirrors. In the homes of some illustrious old families the coat-of-arms appeared in the carving above the mantel-shelf and the same device was sometimes carried out in the decoration of the iron firebacks

Fenders of brass or iron were generally used with these grates, a small one placed close to the fire preventing the ashes from scattering over the hearth, while a larger one surrounded the entire fireplace. Although hob-grates are to be found in some old-time Northern mansions, there were much more popular and widely used in the South.

It was the stove invented by Benjamin Franklin in the year 1745 that superseded the open fireplace in the homes of the North to a great extent. These stoves were usually constructed of iron with trimmings of polished brass in the form of rosettes, railings and knobs of various sizes and shapes. In appearance the Franklin stove was some-

The charm of this seventeenth century fireplace is its great breadth and the antique ornaments which surround it

in use at that time. Another design which was occasionally employed in ornamenting these firebacks consisted of a medallion bearing the owner's monogram and surmounted by the family crest. Floral patterns, too, were popular and adorned the back of many an eighteenth-century fireplace.

About the middle of that century a number of innovations along the line of fireplaces made their appearance. Among these one of the earliest was the quaint little hob-grate, which was invented about 1750. These grates were often fitted into open fireplaces which had been partially bricked up. The grates themselves consisted of iron bars, designed for burning coal rather than wood, and these bars were at first spoken of as "cat-stones" in contradistinction to the name "fire-dogs" which was applied to andirons for holding wood.

what similar to the small open fireplace, with andirons for burning wood. As heat producers, however, they were a decided improvement on many of the poorly constructed fireplaces which had been in use previous to their introduction. Many of these had smoked abominably and much of the heat had gone up the chimney instead of contributing to the warmth of the rooms. In this respect the new stove was far better, for it proved much more economical, as there was little waste of heat through the pipe connecting it with the chimney.

Still another form of heating apparatus came into vogue somewhat later in the eighteenth century. This was the fire-frame which appeared about thirty years after the invention of the Franklin stove. It was something of a compromise between the open fireplace and the stove, for it

possessed certain characteristics of each. The frame, which was arranged to be used in a fireplace that had been either filled in with brick or finished with a fire-board, was very similar in appearance to the upper part of the Franklin stove, but differed from it in that it rested directly upon the fireplace-hearth instead of being raised from the floor on legs and having a hearth of its own. Wood was the fuel burned in these fire-frames, and the open fireplace effect was still further enhanced by the andirons and crane which were often to be found as accessories. Even after stoves came into general use fire-frames did not disappear entirely, but were sometimes left in place while a stove was set up in front of them with its funnel passing through the frame into the chimney.

Dating as far back as the earliest fireplaces are found fire-sets, as they were sometimes called, comprising the hearth accessories necessary for an open fire. The oldest of these sets, which were in use long before coal was burned as fuel, consisted usually of a pair of andirons, a long-handled fire shovel and a pair of tongs. In some cases more than one set of andirons was included, for in the great cavernous fireplaces of the colonists' log-cabins the high supports used for the heavy fore-stick and logs were not suitable for the smaller wood and creepers had to be set between the large andirons to hold the short sticks in place. Bellows were often found beside the fireplace in those times, but the poker was rarely if ever included in fire-sets previous to the introduction of coal as a fuel.

In material and design these fire-sets, particularly the andirons, differed widely. Iron, steel, copper and brass were the metals most commonly used for their construction, although in other countries even silver was occasionally made into fire-irons. As for design, they ranged from the very simplest and most unpretentious styles up through the quaint dogs' heads to the grotesque figures and elaborately wrought pieces to be found among good collections of antique hearth accessories.

Andirons for kitchen use were, as a rule, very plain and substantial. Sometimes they were merely straight pieces supported by short legs and having uprights of either plain or twisted metal, topped by small knobs of some sort. They were probably most commonly made of iron, and not a few were rudely hammered and shaped on the pioneer blacksmith's anvil. It is consequently little to be wondered at that many of the andirons once used in Colonial kitchens give one the impression of having been designed for strength and utility rather than for ornamental purposes.

The better class of andirons in use during the seventeenth and early part of the eighteenth centuries were, for the most part, of graceful, but, at the same time, simple and dignified designs. The finest ones were of brass, which was kept brightly polished by the energetic Colonial housekeeper. Short knobs or uprights were often placed a few inches back of the main uprights and served the double purpose of holding the fore-stick in place and of protecting the shining brass. Occasionally, andirons were made in rights and lefts, with the shanks curving out from the short knobs where they joined the straight horizontal supports.

Among other popular andiron designs of this period were the twisted flame, the urn topped, the queer iron and brass dogs with claw feet, the Colonial baluster and the steeple-topped. Of these, the steeple-topped andirons were, perhaps, the rarest, while the Colonial baluster pattern with ball tops was, without doubt, the most popular and commonly used.

A good example of the style of andirons which came into favor during the latter half of the eighteenth century is found in the "Hessian" design. They take their name from the fact that the upright of each iron is cast in the form of a Hessian soldier posed as if in the act of marching. Since this particular pattern first made its appearance immediately after the close of the American Revolution, it is not difficult to comprehend its significance, for it is a well-known fact that the patriotic colonists heartily hated the hired allies who had fought against them in the employ of King George of England. This humbling of the Hessian to service among the flames and ashes, although only in effigy, seemed to afford the Americans a great deal of satisfaction, if the great popularity of these andirons stood for anything.

The building of open fireplaces, and, as a natural result, the demand for andirons and other accessories, grew constantly less, however, as the nineteenth century offered improvements in the form of coal and ugly, unsociable stoves. In time, the furnace was invented, and still more recently, the modern adaptation of gas and electricity.

With so great a number of superior methods at the public's demand it looked as if the old-fashioned open fireplace were doomed to everlasting oblivion, until some progressive person effected a compromise between the modern and ancient styles by inventing gas-logs to burn in a small, new-fashioned fireplace. This was the beginning of the fireplace's reincarnation.

Gradually other fireplaces came into existence, and in the course of a few years many homes were to be found which boasted of neat little open fireplaces with hearths and facings of delicately colored tiles, ornate firebacks and fittings and elaborately decorated mantels. These fireplaces were arranged sometimes for burning wood and sometimes for coal, but it happened more frequently that they were considered too fine for use and so were never desecrated by ashes or cinders.

Now, however, the tide of fashion has turned in favor of a fireplace built on good old-fashioned lines, a fireplace that is cheery and homelike and whose greatest charm lies in its fire of blazing logs. As for the materials of which they are built, some of the most attractive are of cement with designs or mottoes laid in mosaics, of substantial red brick, and of rough field-stone. Tiles, too, are still employed for this purpose, but they are no longer of a variety too dainty to be used, for the modern fireplace, like the ancient, is designed for practical use and not merely as an ornament. Best of all, the constantly increasing number of these commonsense fireplaces, constructed in the generous proportions of their early predecessors, seems to indicate plainly that the day of the open fire has again come, and that it has come, let us hope, to stay. We may be assured, if it does, of better health and comfort.

CORRESPONDENCE

The Editor of *American Homes and Gardens* desires to extend an invitation to all its readers to send to the Correspondence Department inquiries on any matter pertaining to the decorating and furnishing of the home and to the developing of the home grounds.

All letters accompanied by return postage will be answered promptly by mail. Replies that are of general benefit will be published in this Department.

Problems in Home Furnishing

By Alice M. Kellogg

Author of "Home Furnishing: Practical and Artistic"

COVERING CUSHIONS FOR A WINDOW-SEAT

A BROOKLYN subscriber, J. H. G., in repapering her dining-room, finds that the old covering for the cushions of the window-seat do not look well. "My cushions have had a cover of tapestry that looked right with the old paper; but now, with a fresh paper on the walls, and the woodwork repainted white, the cushions look faded and soiled. The rug is mixed tans, mahogany and green, and the wall-paper is now a figured one with green and brown predominant. Are there any new materials for this special use?"

Corduroy or velour is the best covering for a seat that has much wear, and these materials come in different styles from the plain kind that has been so long in vogue. The corduroy may now be had in wide and narrow lines, and instead of the twenty-seven-inch width, it comes fifty inches wide. The velour has always been made in a great variety of colors, but it can be had now in stripes and also woven with a fine gold line. There are also shaded velours in which two contrasting colors are blended.

If the velvet surface of these goods is too fine for the room described by this correspondent, there are homespuns in a great many different shades, heavy linens, taffetas, jutes and mercerized cottons, all in plain colors. These will look better than a pattern with the tapestry paper and figured rug.

BEDSPREAD FOR A CALIFORNIA HOME

"Will you kindly advise me as soon as possible what kind of a spread to use on my maple Napoleon bed? The room is papered in pale blue. I have white muslin curtains at the windows, with pale blue crêpe curtains over them. Should the counterpane hang over the siderail? Or, should it be tucked in? Should I have a valance? Also, is a bolster better than a pillow? Please suggest the right material for my room, and oblige an interested reader in the Far West."—F. W. W.

A bedstead of the Napoleon, or sleigh, design looks best with the counterpane tucked down the sides and no valance. The color of the carpet or rug is not given, and this would enter into the scheme of the room. A blue and white room is improved by the addition of some color, green or pink, and this may be introduced in a cretonne spread, with a small spread to cover the pillow as it is laid flat at the head of the bed. A bolster is not used as much as it was some years ago.

WRITING-DESK FOR A SMALL SPACE

A reader who is furnishing her reception-room (Mrs. D. C. F., of Indiana), inquires if it would be in good taste to place a writing-desk or writing-table in the room? "I have never seen a piece of furniture of this kind in a reception-room, but writing equipment is often needed separate from the regular desks of the family. My parlor, or reception-room, is not at all of the formal kind; in fact, it is so small that an ordinary-sized writing-desk would not be possible to install. Is there anything that would answer my purpose that would not be the conventional thing?"

A writing-table, compact in shape and well-designed, would be an attractive part of the furnishings of this room. One of the popular half-moon card-tables could be adapted for writing by removing the lid that stands against the wall and fastening a rail at the back, with pockets for holding note paper and envelopes. A desk set of antique brocade would increase the interest of a table of this kind.

WOOD FINISH FOR A NEW HOME

A reader who has found many general helps in this department now asks for something more specific to meet the needs that have arisen in building a new house. "Our dining-room is trimmed in chestnut, but the stain has not been decided upon yet. There is a rough brick mantel and our furniture is of medium dark oak. The side wall is to be paneled five feet six inches high, with a plate-rail above. What material is best to use in the space above plate-rail? Is it correct to hang pictures in this space? For our living-room we have mahogany furniture and some well-made green velour portières. What color of woodwork is the best for this room? Also, suggest the color to stain the woodwork in the hall. Upstairs we have decided upon white paint with mahogany doors."—H. W.

The chestnut trim in the dining-room may be stained to match the furniture, if the color is a good one, that is, a color worth repeating in larger quantities. The space above the plate-rail looks best with pieces of copper, brass and pottery standing on the shelf. If carefully selected these pieces may be a very interesting part of the decorations of this room. The wall space, as it is to be a background, should be in a plain or two-toned covering, crash, buckram, or one of the new fiber hangings. There are also some attractive materials that can be sewed together and tacked to the wall instead of paper. As the living-room opens out of the main hall, the same finish may be given both places. White paint, as a rule, is the best background for mahogany furniture, but when the room is to be the main living-room a quieter scheme for constant use is often more desirable. One of the weathered gray stains may be used in the living-room and hall, as its neutral tone will allow the introduction of more colors than a brown. The green door curtains and mahogany furniture, especially if the latter is covered with greens and blues, will both look well with this wood finish.

BATHROOM RUG

"What kind of a rug shall I buy for my bathroom? The pink-and-white and blue-and-white rugs seem to me too delicate for much service. Is there anything else?"—S. E. F., of Virginia.

The cotton rugs that are made for bathrooms in white with one color added are more easily soiled than the Wilton rugs that are copied from Oriental patterns. There are also plain Wilton rugs with a band of darker color around the edges. A new rug is made of wool in the natural color, and this is advantageous as there is nothing to fade or discolor. The mohair rugs are used in the bathrooms of our large hotels. These cost ten dollars for a size three by six feet. In some households an inlaid linoleum is fastened down over the floor and the heavy Turkish towels laid down for bathing, and no rug kept on the floor. Sometimes a strip of velvet carpet, with the ends neatly finished, makes the most suitable rug for a bathroom floor. As the velvet carpet comes in different widths this plan is often the most practicable.

ARRANGING THE FURNITURE

One of the frequent problems at this season of moving from one house, or apartment, to another, is the arrangement of the furniture. Sometimes, in the new house, it seems as if none of the old furniture would fit. "I am quite disheartened," writes Mrs. V. L.," after moving all of my furniture in from a suburban house of ample spaces to a city flat, to find that my rooms look like a shop or museum. Nothing seems to fit together, and, in trying to follow out the same arrangement that I have always had nothing looks right."

The new conditions naturally make the old arrangement out of place, and it would be better to begin at once to adapt the furniture to the place in which it is to be kept than to try to maintain the former plan. It is difficult to give up one's furnishings, but this is sometimes the wisest thing to do when spaces are too small to allow them to fit comfortably. If there is no storeroom where unnecessary articles may be kept, the auction-room may be remembered, or some household where a gift of furniture would be welcomed. In placing the furniture in a new home the wall spaces will be a guide in distributing the larger pieces. After this the grouping of chairs and tables may be adjusted to the ways of the family.

Garden Notes

Conducted by Charles Downing Lay

WINTER PROTECTION

PROTECTING plants from the winter's cold is not so important as it might seem, for it is seldom the cold that kills them, but rather the alternation of heat and cold which we get on some of our winter days, when the thermometer may be near zero in the morning and in the sun, at noon, up to 35 or 40.

Rhododendrons and other broad-leaved evergreens should be heavily banked with leaves (at least a foot deep, and eighteen inches is better), which keep the ground from drying out in the high winds. Rhododendron leaves, which are evergreen, are evaporating moisture all the time and they can not get get this moisture fast enough from deeply frozen ground. All evergreens and conifers, of course, suffer in the same way. A foot or so of leaves will usually keep the frost out, and many tender things can be safely wintered in the ground if they have such protection.

Small and shallow-rooted plants need protection in winter to keep them from heaving. Bulbs, too, are often thrown out of ground by freezing and thawing.

A generous coating of strawy manure on the lawn is doubtless a help, even if it has no fertilizing qualities.

The protecting material, whether it be leaves, or manure, or what not, should be left on until the middle or end of March, when it can be raked off and put on the compost heap. Let all the winter protection be on the ground and keep the horrid straw overcoats off. If plants must be shaded in winter, use evergreen boughs with their ends stuck in the ground so that they will stand upright.

Strawberries need a good covering of leaves, strawy manure or salt hay. This should be put on in December and not taken off until spring.

Tulip beds should be covered with leaves—not manure.

Leaves or manure five or six inches thick make a good winter covering for the flower garden.

BULBS IN THE HOUSE

Hyacinths, Chinese lilies and paper-white narcissus can be grown in glasses of water in the house. The hyacinth glass, with its wide top, is well known and convenient, but any dish or glass which will hold the bulb so that its base just touches the water, will do.

Vases filled with cocoa fiber kept constantly moist, on which the bulb is set, are just as good as the special glass. Tulips and narcissi could be grown in this way quite effectively. After being planted the bulbs should stay in a cool, dark closet or cellar, for two or three weeks until the root growth is vigorous. After that they can be brought to the light and will soon flower.

TREES IN BOXES

Trees in boxes for outdoor decoration in winter are much used in cities and are always difficult to handle. They are sure to die because there is no way to water the frozen soil in the pot or box, and without watering they soon dry up and turn brown.

Box trees seem to go the quickest and are a melancholy sight after a few weeks. They should never be attempted for window-boxes or for tubs at the front door.

The common red cedars are probably the best thing to use. They will die, too, but not so quickly as the box, and they are not so ugly when dead. They are inexpensive and can be replaced as many times as one likes. It would be easy to have a stock of them planted in the backyard (if one has a backyard), where they can be drawn upon as may be necessary through the winter.

Other trees which can be used are the retinosporas, arbor-vitæs and hemlocks. Ivy is always good for winter decoration if there is any reasonable way to train it up, and it is as hardy as most things.

CHRISTMAS TREES

It is lots more fun if one lives in the country to have the Christmas tree growing on the place where the children can see it and dream through the summer of its splendor when Christmas comes. A little tree really does as well as a large one, and if it could be planted and growing in a pot, it would be all the more delightful.

The typical Christmas tree is the balsam, but a white spruce is a good substitute.

THE BEAUTY OF VINES IN WINTER

The artistic aspect of vines in winter deserves some consideration, because every place should look well even during the six months when deciduous plants have no green leaves. The bare wistaria casting its shadows on a marble house may have as much beauty, though of a different sort, as the same vine in full bloom. We are not outdoors to enjoy such a picture so much in winter, but is it not important when seen from the windows of the house?

The winter season leads us to the enjoyment of the more minute and less luxuriant beauties of nature, and the leafless branches are the greatest of these beauties.

The Boston ivy, when young, makes a delicate lace-like tracery on the building to which it clings. It is uninteresting in color and when old it has lost all its delicacy and charm.

The strong twining stems of the trumpet vine are like the grape in character, but lack the deep red color of the grape branches, being instead a sort of pale straw color. The grape buds, too, are large and handsome, whereas those of the trumpet vine are inconspicuous.

The clematis is in winter (except the very oldest stalks) a disorderly mass of color with no charming detail, unless it be studied very closely. The feathery white seeds, however, are lovely and last well into the winter.

The honeysuckle, too, is a messy tangle, but little helped by its dark berries.

The orange and yellow fruits of the celastrus are the handsomest of all the winter berries, and the vine itself in its convolutions and picturesque turnings and twistings is unsurpassed.

The akebia resembles the celastrus in character of stem, but it is more delicate, though no less intricate.

The wistaria has many beauties and great picturesqueness, particularly when it is old and its strong rope-like stems have bent and broken the iron fence, perhaps, which its delicate branches used years ago as a support.

But the handsomest of all vines, though it does not grow on houses, is the common bull briar. Its green branches and yellow-tipped thorns, its wiry growth and twisting tendrils, its beauty in the distance when it seems like a delicate green silk scarf thrown over some tree, make it the vine of vines for winter beauty.

WINDBREAKS

There are few places so fortunately situated or so well planted that they do not need some thick planting as a protection from the winter winds. It may be only a strip of shrubs, fifteen to twenty feet wide, growing eight to twelve feet high, or it may be wide plantations of pines, hemlocks and spruces along the northern boundary of the place. But, whatever it is, it will, if properly arranged, moderate the vigor of a northwest wind and make life out of doors in winter much more comfortable.

A border of shrubs at the north of the flower-garden is not only good as a windbreak, but it also makes the snow drift heavily in its lee, and snow is the best protection for ordinary plants that there is.

On a large place it might be well to plant successive windbreaks running east and west, some high and some low, taking advantage of the lay of the land and planting the high places.

A mixture of pines and oaks and birches is the most beautiful windbreak, but probably hemlocks alone are the most efficient. When starting the plantation, plant the evergreens fifteen feet apart and plant between as "nurses" many small trees like Tartarian maple, striped maple, and mountain maple, dogwood and gray birches. With these, too, could be planted such large shrubs as the buckthorn, privet, sumac, nine bark, viburnums, etc. Each shrub will then be four or five feet from its neighbors, whether tree or shrub. These deciduous things protect evergreens without interfering with their growth; after six or eight years they may be cut out if they have not by that time been killed by the shade.

FERN GLOBES

The small glass globes filled with moss and partridge vine, which are so common in the florists' shops now, are cheerful things to have in the house in winter. They are bright and pleasant to look at, though they do seem quite lifeless—almost like wax. They require little care and no sunlight.

A fish globe of any size may be used, and it can be inverted over a glass dish or a round glass cover can be made to go on top. It must be covered in order to keep the air constantly moist inside.

The globes can be loosely filled with partridge vine stuck in a little damp moss; or with ferns and short pieces of black alder with the berries on; or with wintergreen and ground pine. Twisting sprigs of bittersweet with the berries on and with small sprays of box would be very effective. One might even dare to attempt an arrangement in which the berries of the sumac would be the striking feature. The idea of these globes is the same as that of the old Wardian cases, but it is not so pretentious, and for that reason it is more endurable.

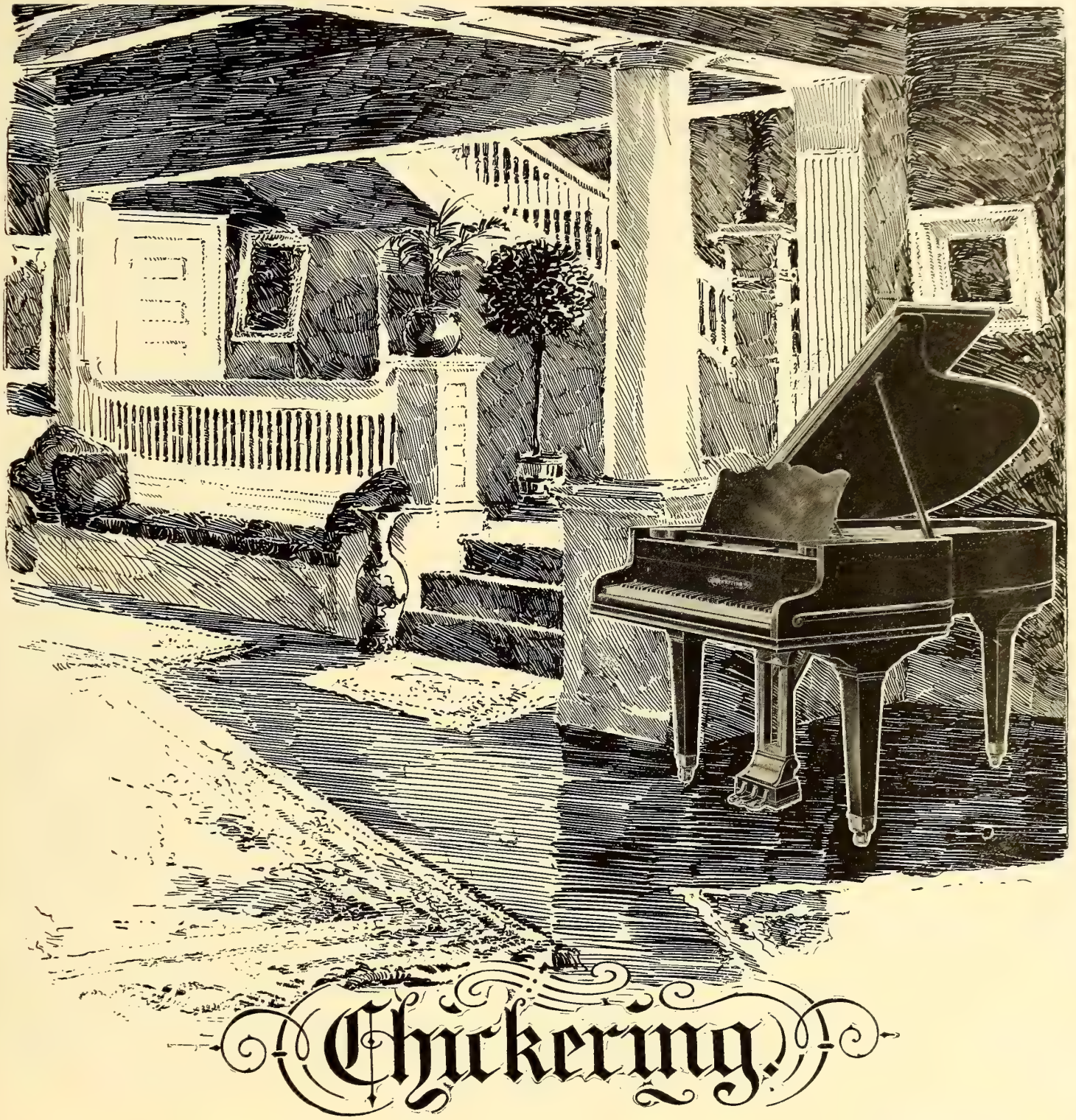
LARGEST OLIVE RANCH IN THE WORLD

VERY few Eastern people, comparatively, know that the largest olive ranch in the world is located within 25 miles of Los Angeles, Cal.

This wonderful orchard, situated at Sylmar, is ten times larger than the biggest olive ranch in Spain. There are over 120,000 olive-bearing trees, and they average 50 pounds of olives to the tree. The Sylmar ranch consists of 12,000 acres, and each acre contains 110 trees, which produce 2000 gallons of olives each season. This quantity of fruit makes 250 gallons of pure olive oil—valued at $2 per gallon—thus equaling $500 per acre profit.

The olive wood is highly prized by cabinet-makers, as it is very hard and takes a high polish. The Italians consider an olive orchard as a perpetual source of wealth, as the older it grows the more valuable it becomes. The trees are supposed to live about 4000 years under favorable conditions. There are some olive trees now on the Mount of Olives, in Palestine, which are computed to be not less than 3000 years old.

The olive industry has been growing steadily in California since its first introduction by the early Spanish mission fathers; and the olive culture in that State can never be overdone, since the olive can be produced on the American continent with any degree of success only in central and southern California, New Mexico, and Arizona.



Chickering.

A household word wherever pianos are known. Associations and fragrant memories cluster about it. The oldest American piano and of greater reputation for excellence than any other, and their reputation one that is justified by their great beauty of tone and durability.

Style H, *Upright* grand, $550 Style W, Quarter grands, $700

Chickering Pianos may be bought of any regular Chickering representative at Boston prices with added cost of freight and delivery. Our literature will be sent upon request.

Made Solely by CHICKERING & SONS

891 Tremont Street, Cor. Northampton Established, 1823 BOSTON, MASS.

A Highway of Communication

It goes by your door. Every Home, every office, every factory, and every farm in the land is on that great highway or within reach of it. It is a highway of communication, and every Bell Telephone is a gateway by which it can be reached.

Millions of messages travel over this highway every day. In the great cities they follow one another like the bullets from a machine gun, and over the wide reaches of the country they fly with the speed of shooting stars.

The Bell service carries the thoughts and wishes of the people from room to room, from house to house, from community to community, and from state to state.

This service adds to the efficiency of each citizen, and multiplies the power of the whole nation.

The Bell system brings eighty million men, women and children into one telephone commonwealth, so that they may know one another and live together in harmonious understanding.

A hundred thousand Bell employees are working all the time on this highway of communication. Every year it is made longer and broader, and its numerous branches are more widely extended. Every year it is furnished with a larger number of telephone gateways and becomes the means of greater usefulness.

The Bell Long Distance Telephone will meet your new needs and serve your new purposes. It means — one policy, one system, universal service. Every Bell Telephone is the center of the System.

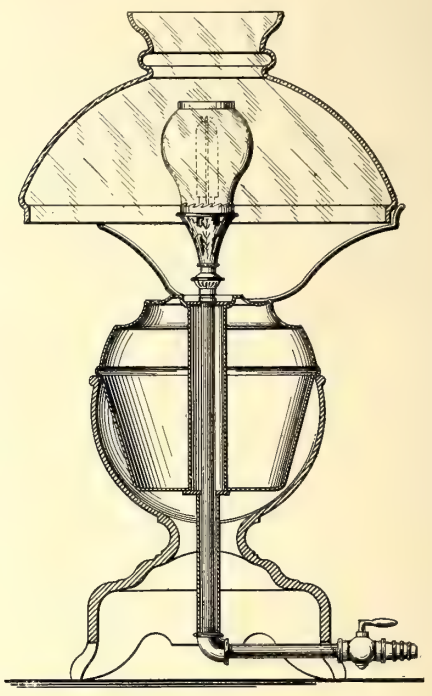
AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

DROP LIGHT MADE FROM AN OIL LAMP

By B. A. Johns

Since gas has supplanted kerosene for illuminating purposes many quaint and highly prized oil lamps have been put out of commission. These lamps may be changed into attractive drop-lamps in the manner illustrated herewith.

A center-draft lamp is best adapted for the purpose, but any kind will answer. The hole on top of the oil reservoir is first soldered up, and through the central draft tube a small gas pipe is placed, with a threaded end on top, to receive the burner. Any mantled burner may be used. Under the burner is placed a washer,



Drop Light Made from An Oil Lamp

resting on top of the oil reservoir, which keeps the burner in place. At the lower end of the gas-pipe an elbow is screwed on. Between this elbow and the bottom of the oil reservoir is placed a short piece of pipe, so that, when the elbow is screwed up, the tube will be tight, thereby holding burner secure to the oil reservoir. From the elbow, a short piece of gas-pipe is screwed in, with the ordinary stopcock and attachment for the gas hose.

NEW BOOKS

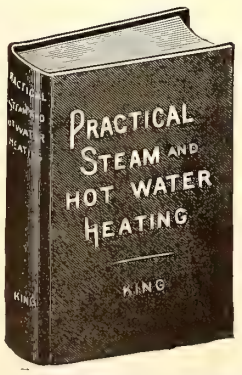
HANDY MAN'S WORKSHOP AND LABORATORY. Compiled and edited by A. Russell Bond. New York: Munn & Co., Inc. Pp. 467. Price, $2.00.

This is a book of first-rate importance and interest, and is a notable contribution to practical work from the office of the "Scientific American." It is a book that not only aims to

JUST PUBLISHED

Practical Steam and Hot Water Heating and Ventilation

JUST PUBLISHED



By ALFRED G. KING

402 Pages. Containing 304 Illustrations

Price $3.00

An original and exhaustive treatise, prepared for the use of all engaged in the business of Steam, Hot Water Heating and Ventilation

THE standard and latest book published. Tells how to get heating contracts, how to install heating and ventilating apparatus. Describes all of the principal systems of steam, hot water, vacuum, vapor and vacuum-vapor heating, together with the new accellerated systems of hot water circulation, including chapters on up-to-date methods of ventilation; fan or blower system of heating and ventilation; rules and data for estimating radiation and cost, and such other tables and information as make it an indispensable work for heating contractors, journeymen steam fitters, steam fitters' apprentices, architects and builders.

This work represents the best practice of the present day and is exhaustive in text, diagrams and illustrations.

CONTAINING CHAPTERS ON I. Introduction. II. Heat. III. Evolution of Artificial Heating Apparatus. IV. Boiler Surface and Settings. V. The Chimney Flue. VI. Pipe and Fittings. VII. Valves, Various Kinds. VIII. Forms of Radiating Surfaces. IX. Locating of Radiating Surfaces. X. Estimating Radiation. XI. Steam-Heating Apparatus. XII. Exhaust-Steam Heating. XIII. Hot-Water Heating. XIV Pressure Systems of Hot-Water Work. XV. Hot-Water Appliances. XVI. Greenhouse Heating. XVII. Vacuum Vapor and Vacuum Exhaust Heating. XVIII. Miscellaneous Heating. XIX. Radiator and Pipe Connections. XX. Ventilation. XXI. Mechanical Ventilation and Hot-Blast Heating. XXII. Steam Appliances XXIII. District Heating. XXIV. Pipe and Boiler Covering. XXV. Temperature Regulation and Heat Control. XXVI. Business Methods. XXVII. Miscellaneous. XXVIII. Rules, Tables and Useful Information.

Valuable Data and Tables Used for Estimating, Installing and Testing of Steam and Hot-Water and Ventilating Apparatus are Given

MUNN & COMPANY, INC. **361 BROADWAY, NEW YORK CITY**

Wall Papers and Wall Coverings ***A Practical Handbook***

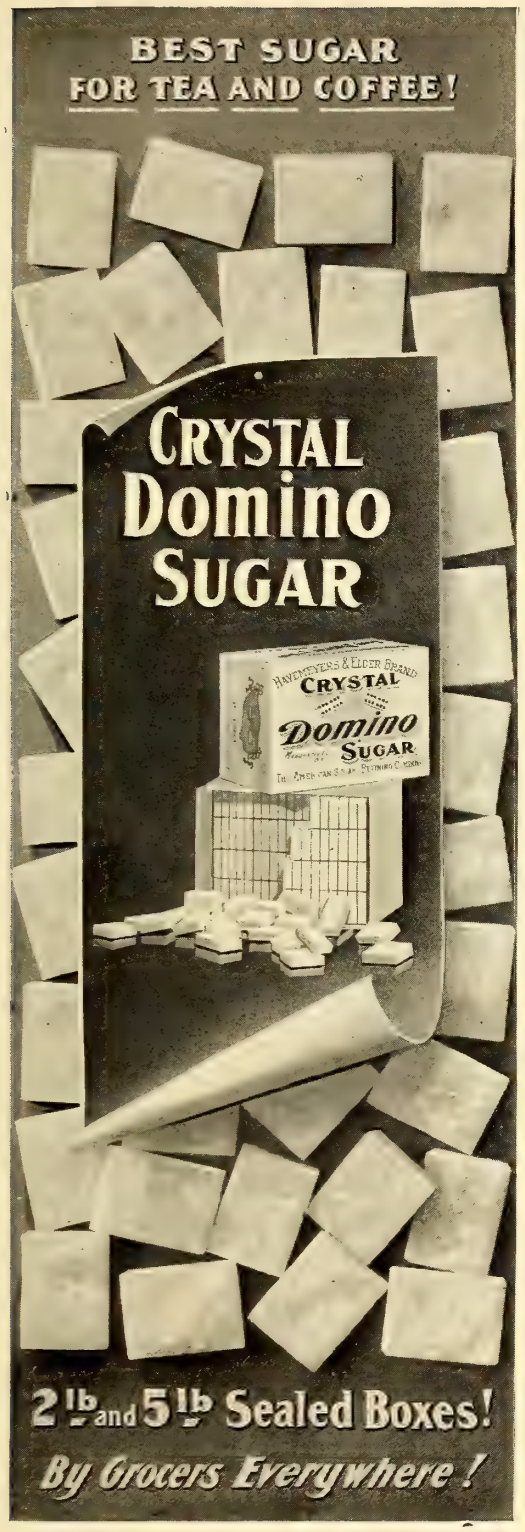
For Decorators, Paperhangers, Architects, Builders and House Owners, with many half-tone and other illustrations showing latest designs

By ARTHUR SEYMOUR JENNINGS

Includes characteristic designs in vogue to-day. Gives reliable information as to the choice of Wall Papers and describes the practical methods of applying them

One Large 8vo Volume. Cloth. Price $2

MUNN & CO., Inc., 361 Broadway, New York



The Tobey Furniture Stores

(New York and Chicago)

—are acknowledged by traveled connoisseurs to be among the world's foremost expositions of Fine Furniture and Accessories of the better grades. Visitors are always welcome to inspect at leisure the various displays, whether wishing to purchase or only to be informed.

Correspondence concerning any department of our service is invited.

The New York Store

11 West Thirty-Second Street
(Near Fifth Avenue)

Here we show only our elegant Tobey Handmade Furniture, in the finest solid mahogany, Circassian walnut, satin-wood, oak and curly maple; also in marble-wood, tonquin-wood, rose-wood, and other rare woods. The designs are by our own artists, and the furniture is made in our own shops by cabinet-makers possessing the highest order of ability known in the world to-day. The range of patterns covers the requirements of the best classes of American homes.

The Chicago Store

Wabash Avenue and Washington Streets

The displays of the Chicago store are most comprehensive, grouping themselves as follows: *Furniture*—An immense variety, representative of the lines of over two hundred of the world's best makers, the grades ranging from the simple and modest-priced to the most elegant and expensive. *Curtains, Decorative Fabrics and Imported Wall Papers*—An exceedingly attractive and very complete assortment of desirable grades, including the English Morris products. *Oriental Rugs*—One of the largest and most carefully chosen collections in the country, in charge of our native Armenian expert. *Gift Rooms*—A pleasing display of objects of household art especially suitable as gifts, in refined designs and serviceable qualities.

Completely organized Departments of Interior Decoration are maintained at each store. Representatives will call anywhere in the United States upon appointment.

The Tobey Furniture Company *ESTABLISHED 1856*

JUST PUBLISHED

THIRD EDITION OF

KIDDER'S

Churches and Chapels

By F. E. KIDDER, Architect

This edition has been thoroughly revised by the author, and enlarged, many new designs being added, including several new designs for Catholic churches. There are 120 illustrations in the text and more than **50 full-page plates.** The book contains a large number of plans and perspectives of churches of varying costs. Besides this there is much concise and practical information relating to planning and seating; details of Construction, Heating and Ventilation, Acoustics, etc., making it in its present form

The Best American Book on Church Design and Construction

One oblong quarto volume. Price, net, $3.00

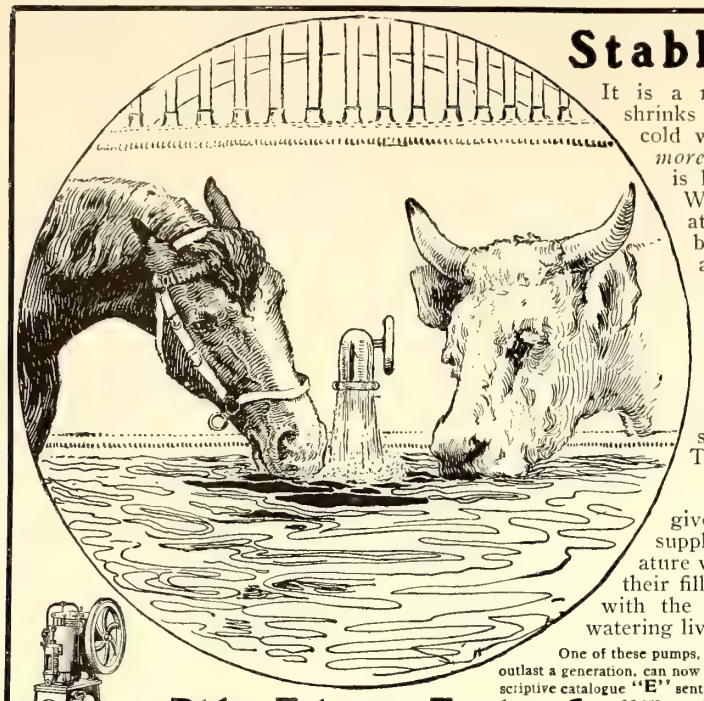
MUNN & Co., Inc., 361 Broadway, N. Y. City.

AFTER THE FIRE

While the fireman is dragging away the last piece of hose is no time to begin to wonder if your insurance is all right. You should know now. Don't put off a day looking up your policies. If they are in the Hartford don't worry. For 99 years it has promptly paid every honest loss. If not in the Hartford and they are to expire soon—as a reminder just make a note on the margin like this

Insure in The Hartford

Agents Everywhere



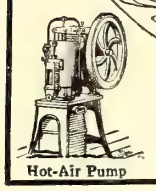
Stable Comforts

It is a noticeable fact that live stock shrinks in weight and grows poor during cold weather; *cows especially fall off more than one half in their milk;* this is largely due to insufficient water. While there may be water enough, at some half-frozen spring or brook, out in the yard or pasture, at which, every morning, if he thinks of it, the farmhand breaks the ice, yet the effort to reach it on cold days and in deep snow is so great that horses and cattle will frequently go half dry for days together. For this reason the best stock farms are well supplied with water under cover. The

Hot-Air Pump

gives an abundant and permanent supply, always fresh and at a temperature which invites the animals to drink their fill. Besides, it does away entirely with the slow and expensive process of watering livestock with a pail and by hand.

One of these pumps, representing a permanent investment which will outlast a generation, can now be bought at the very low price of $90. Descriptive catalogue "E" sent free on application.



Hot-Air Pump

Rider-Ericsson Engine Co.

35 Warren St., New York — 40 Dearborn St., Chicago
239 Franklin St., Boston — 40 N. 7th St., Philadelphia
234 West Craig Street, Montreal, P. Q.
22 Pitt St., Sidney, N. S. W.

(Also builders of the new "Reeco" Electric Pump)

ARE YOU GOING TO BUILD?

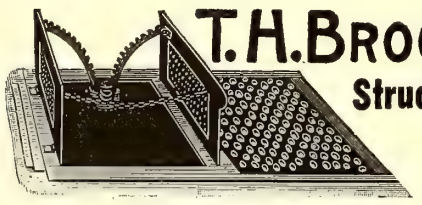
The specification of Woodward-Eubanks Mantels by the Architect means satisfaction to the cultured home-builder.

Natural beauty of materials and harmonious elegance of design form a combination of constructive elegance unsurpassed.

Our 75-page, 10x14 inch catalog, which will be sent free to anyone interested (enclose ten cents to cover postage), and state the number of mantels required.

The most unique line on the market. Write for catalog to-day.

WOODWARD-EUBANKS MANTEL CO., Dept. D, Atlanta, Ga.



T. H. BROOKS & CO. CLEVELAND, O.

Structural & Ornamental Steel Work

FLOOR & SIDEWALK LIGHTS.

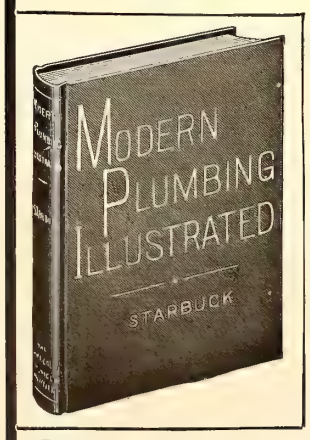
SEND FOR CATALOGUE.

Dixon's Silica Graphite Paint Lasts

And the reason why it lasts is because its pigments are inert. What have inert pigments to do with it? Our Booklet 106B will tell you.

JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.

Modern Plumbing Illustrated



By R. M. STARBUCK

400 (10¼ x 7½) PAGES

55 FULL PAGES OF ENGRAVINGS

PRICE, $4.00

¶ A comprehensive and up-to-date work illustrating and describing the Drainage and Ventilation of Dwellings, Apartments and Public Buildings, etc. The very latest and most approved methods in all branches of Sanitary Installation are given.

¶ Many of the subjects treated in the text and illustrated follow in the next column.

MUNN & CO., Inc., Publishers

Scientific American Office, 363 Broadway, New York

SOME OF THE SUBJECTS TREATED

Connections, sizes and all working data for Plumbing Fixtures and Groups of Fixtures
Traps — Venting
Connecting and Supporting of Soil Pipe
House Trap and Fresh-Air Inlet
Floor and Yard Drains, etc.
Rain Leaders
Sub-soil Drainage
Floor Connections
Roof Connections
Local Venting
Bath Room Connections [etc.
Automatic Flushing for Factories, School Houses,
Use of Flushing Valves
Modern Fixtures for Public Toilet Rooms
Durham System
Plumbing Construction without use of Lead
Automatic Sewage Lift — Sump Tank
Disposal of Sewage of Underground Floors of High Buildings
Country Plumbing
Cesspools
The Electrolysis of Underground Pipes
Septic Tanks and Sewage Siphons
Pneumatic Water Supply, Rams, etc.
Examples of Poor Practice
Roughing — Testing
Continuous Venting for all classes of Work
Circuit and Loop Venting
Use of Special Waste and Vent Fittings
Cellar Work
House Drain — House Sewer — Sewer Connections
Plumbing for Cottage House
Plumbing for Residence
Plumbing for Two-Flat House
Plumbing for Apartment Houses
Plumbing for Office Building
Plumbing for Public Toilet Rooms
Plumbing for Bath Establishment
Plumbing for Engine Houses
Plumbing for Stables
Plumbing for Factories
Plumbing for School Houses, etc. [by Electricity
Thawing of Underground Mains and Service Pipes

be practical, but which is practical from cover to cover. It is a collection of ideas and methods, of ways to do things, of what to do and how to do it as proposed, tried out and tested by resourceful men, both amateur and professional. It contains, in short, upwards of a thousand ingenious "kinks," ideas and hints, useful to the household, attractive to the mechanic and interesting to every one who loves to tinker and make articles of use and value, or in whom the spirit of experimentation is inbred.

Unlike many books of this kind, however, this is no collection of scientific experiments. In fact, it is not an experimental book at all, but a treatise of useful things. It is not concerned with theory, but with fact. It deals not with what will give curious results, but with achievements of real value and utility. And this it does in the most direct way possible. The descriptions of methods are concise and clear, and at every point they are supplemented with drawings and diagrams, many of which are in the form of working drawings that show, in a very precise and definite way, just what to do and how to do it. There are 370 such illustrations in the book, very clearly drawn and lettered, and illustrations that illustrate in the best sense of the word.

The general plan and scope of the book is well expressed in its title. It is very literally the handy man's workshop and laboratory. It does not undertake to cover the whole realm of the mechanics of the shop and factory, of the home and household, but it does offer itself as the guide to the handy man in these places. Its value is, therefore, very distinct and very wide. It appeals, therefore, to a very large class of readers and workers. The mechanic and the professional man may alike find help and suggestion in its pages; the householder may here learn of a multitude of things both convenient and helpful; the amateur craftsman will find enough to keep him busy for many a long day; the sportsman is not forgotten, and so very new a device as the construction of toy flying machines is treated at length.

Mr. Bond is to be heartily congratulated on the admirable and thorough way in which he has performed his task of selection and editing. The origin of the book is the result of a department established some time ago in the "Scientific American," devoted to the interests of the "Handy Man." A flood of suggestions poured in from a multitude of sources, and the best of these have been reproduced in the present volume. It is, however, in no sense a reprint from the "Scientific American," since much of its contents is now printed for the first time.

Mr. Bond has devised a book that will very successfully appeal to a very wide circle. The amateur workman is attracted by the opening chapter on fitting up a workshop. Both he and the professional mechanic will find a host of suggestions on the greatest diversity of topics in the next chapter on Shop Kinks. Both, again, will be interested in the very valuable chapter on the soldering of metals and the preparation of solders and soldering agents. Here is a long list of formulas for solders, of tried and tested accuracy. The professional mechanic is especially appealed to in the fourth chapter on the "Handy Man in the Factory," while still another class of readers will be interested in the fifth chapter on the "Experimental Laboratory." Electricity is very fully treated in the sixth chapter, and the householder will find a wealth of suggestions in the numerous devices described in the seventh. The sportsman will be helped with the hints of the eighth chapter, while tthe final chapter on flying machines is of the greatest possible present-day interest. It is, in short, a book of the widest general interest,

TWO KINDS OF PEOPLE
BUY AND EAT

Atwood Grape Fruit

First, those who want the most delicious grape fruit they ever tasted, the thin-skinned kind that is filled with luscious juice and has the genuine grape fruit flavor; the kind that has resulted from years of experimenting and the outlay of hundreds of thousands of dollars; the kind that a prominent physician of New Haven prescribes for all his patients, telling them to "be sure to get the ATWOOD, for other grape fruit to the ATWOOD is as cider apples to pippins;"

Second, those who would increase their energy, clear their complexion, brighten their eyes, renew their youth, and rid themselves of rheumatism or gout. These eat ATWOOD GRAPE FRUIT morning and evening.

The Bureau of Chemistry of the Department of Agriculture at Washington, in speaking of citric acid as found in grape fruit, says:

> **"It combines with certain bases and the resulting combinations in turn are transformed into carbonates, thus rendering an unduly acid urine alkaline."**

All genuine Atwood Grape Fruit has the Atwood trade-mark on the wrapper, and may be purchased from high-class dealers by the box or dozen. Price per standard box, containing 54 or 64 or 80, **Six Dollars.**

THE ATWOOD GRAPE FRUIT COMPANY. MANAVISTA, FLA. TRADE MARK

Buy it by the box—it will keep for weeks.

THE ATWOOD GRAPE FRUIT COMPANY
KIMBALL C. ATWOOD
President
290 Broadway, New York

JUST PUBLISHED

Bungalows, Camps & Mountain Houses

Consisting of a large variety of designs by a number of architects, showing buildings that have been erected in all parts of the country.

Many of these are intended for summer use, while other examples are of structures erected in California and the Southern States for permanent residences. Also Camps, Hunters' Lodges, Log Cabins, etc. The book contains

Seventy Separate Designs

of which several are Log Cabins and Camps

78 Exterior Views, 12 Interior Views and 69 Floor Plans

In the text is given an article on "The Bungalow," with hints on selection of site, sanitation, lay-out and construction, together with a very complete description of each design, with cost where it could be obtained. The work is intended to meet the needs of a large class of people who are planning summer homes at low and moderate cost, for erection in the Woods, Mountains, and on Lake and Seashore. Size 8x9½ inches, bound in illustrated boards. Price, $2.00 postpaid.

MUNN & CO., Inc., Publishers
361 Broadway, New York

TRADE MARK **Tapestry Brick**
REGISTERED IN U.S. PATENT OFFICE

The Most Artistic and Permanent Building Material in the World

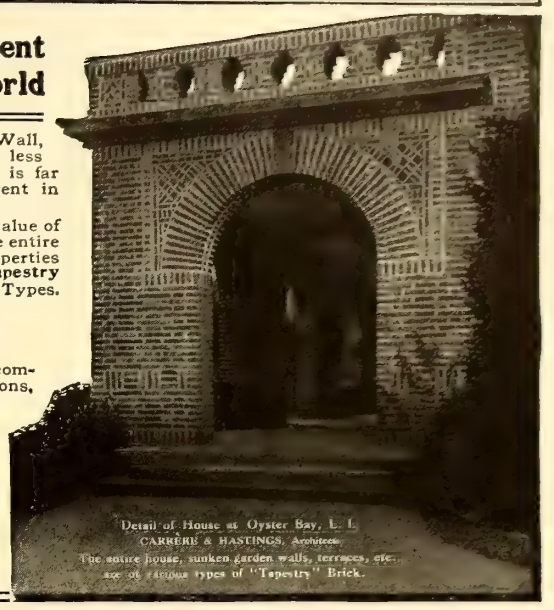
¶ For Castle or Cottage, for House, Stable or Garden Wall, it costs very little more than wood and usually less than concrete (depending somewhat on location), and is far superior and preferable to either. Altogether different in coloring, texture and hardness from ordinary face brick.

¶ For every extra dollar it adds ten dollars to the value of the building and vastly increases the salability of the entire property. Home builders or promoters of suburban properties are especially urged to investigate the many merits of **Tapestry Brick,** with its revival of the old Roman and Persian Types.

There Is Only One "Tapestry" Brick—the name is stamped on each brick

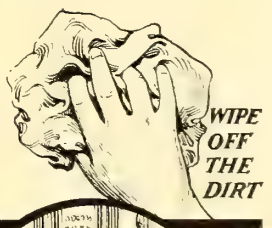
¶ Our valuable book "Tapestry Brickwork," giving comparative costs of wood, concrete and brick constructions, 48 pages, 8 in colors, describing the brick architecture of all ages, full of interest to architect and home builder, sent on receipt of 20 cents (less than the cost to publish). Write for information, describing the work you have in mind.

FISKE & CO., INC., SOLE MANUFACTURERS OF TAPESTRY BRICK
1708 Flatiron Building, New York
We will also direct you to the nearest building made of Tapestry Brick, for your examination.


Detail of House at Oyster Bay, L. I.
CARRÈRE & HASTINGS, Architects
The entire house, sunken garden walls, terraces, etc., are of various types of "Tapestry" Brick.

THE WASHABLE **SANITAS** WALL COVERING

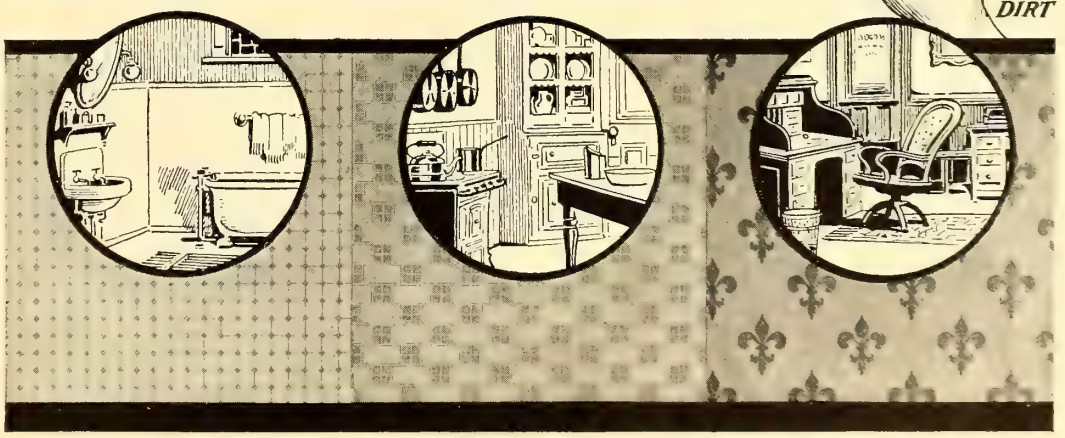
Whenever you have any decorating in mind—for your home or place of business, new walls or old—*get samples of* **Sanitas.** Printed in oil colors on strong muslin, Sanitas is fade-proof, stain-proof, crack-and-tear-proof—a wipe with a damp cloth instantly cleans it bright as new. Here are six Sanitas interiors—living room, dining room, hall, bath, kitchen and office—Sanitas samples demonstrate how handsome and clean they are. Sanitas reproductions of fine wall papers and wall fabrics are wonderfully true to the originals in effect, and even higher in effect value. Sanitas plain and decorative tiles make ideal baths, kitchens and pantries. With all its extra beauty, cleanliness and service, Sanitas costs no more than good cartridge paper.



Write to-day to our Department of Home Decoration—describe the room or rooms you have in mind—and receive free Sanitas samples with sketches of clever new interior effects.

MERITAS STANDARD OIL CLOTH COMPANY — *When you buy table oil-cloth ask for Meritas, guaranteed every yard on the back.*

THE STANDARD OIL CLOTH COMPANY, Dept. 11. 320 Broadway, N. Y.



"The Complete Hotel"

Hotel Statler
BUFFALO

300 Rooms - 300 Baths

Modern in Construction. Artistic in Appointment. Complete in Equipment. Perfect in Service.

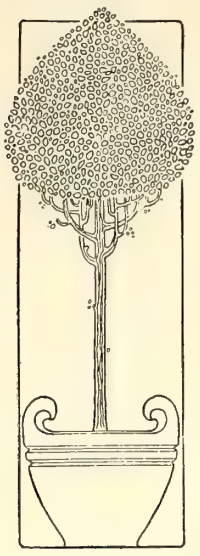
Circulating Ice Water to All Rooms

European Plan Exclusively

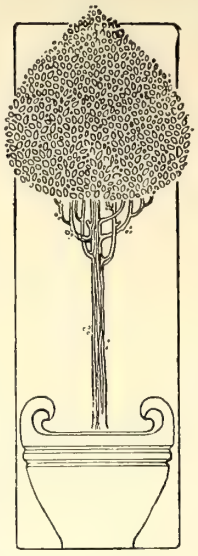
Free Christmas Dinners
For 300,000 Poor People

WILL BE SUPPLIED BY
THE SALVATION ARMY
THROUGHOUT THE UNITED STATES

Will you help by sending a Donation, no matter how small, to Commander MISS BOOTH, 118 W. 14th St., NEW YORK CITY.



A Superb Gift Book



Historic Houses and Their Gardens

EDITED BY CHARLES FRANCIS OSBORNE

Assistant Professor of the History of Architecture, University of Pennsylvania

With an introduction by Frank Miles Day, Lecturer on Architecture at Harvard University

THE wealthy and wise have, from time immemorial, set their houses in the midst of a garden with grassy lawns, clicking pebble walks, splashing water, trees for shade and flowers for scent and color. The garden is the open-air part of a house.

Everyone cannot inhabit the house and the garden that his dreams inspire, but in leafing over such a book as this he can wander at will upon the turf that others have sown, can glimpse enchanting vistas that the greatly fortunate have revealed, can revel in the rooms that centuries of famous family occupancy have hallowed with a history of their own.

"Historic Houses and Their Gardens" affords an intimate picture of places the world over, celebrated for their beauty and their associations. It is of extraordinary value because it comprises an astonishing diversity of scene. Japan, India, Persia, Mexico, Greece and Ancient Rome have contributed to it, with America, England, France, Austria, Spain and modern Italy.

Writers "to the manor born" conduct one through the spacious halls and terraces: The Dowager Countess De La Warr, The Honourable Miss Sackville-West, Miss Acland-Hood, P. H. Ditchfield, George Walter Dawson, and others whose observation is as keen as their pens are facile.

Over three hundred exquisite pictures from photographs, water-color sketches and plans, are beautifully printed on the extra-coated paper which is used throughout.

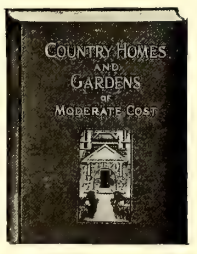
The book is a quarto, 9x12 inches, and contains 272 pages. Bound in Cloth, with gold and ink stamping.

$6.00 Express Prepaid

Country Homes and Garden of Moderate Cost

EDITED BY CHARLES FRANCIS OSBORNE

THIS book has been prepared to satisfy a constantly growing demand from those who are planning to build and lay out their grounds, from those who wish to remodel their houses and those who enjoy seeing portrayed successful houses that have been built at a moderate cost. Leading architects, interior decorators and landscape gardeners who are leaders in their respective fields were asked to contribute. The result is an authoritative book on the whole subject of home building, interior decoration and gardening surpassing anything of the kind yet published.



Country and suburban homes on limited space, on the seashore, in the mountains, alluring bungalows and inexpensive remodelled farmhouses are some of the types presented in picture and text.

Plans and Photographs of Houses and Gardens Costing from $800 to $10,000

Each of the designs is the work of an architect of established reputation, and the photographs were taken especially for the book, after the houses were built. 200 beautiful half-tone engravings form the superb illustrative features. Floor plans of homes, plans of gardens, photographs of interiors and exteriors, general views of completed homes all combine to render the book intensely interesting and helpful.

A quarto volume, size 9x12 inches, sumptuously printed on heavy plate paper, attractively bound in green book-cloth.

$2.00 Express Prepaid

McBRIDE & WINSTON CO., 6 West 29th Street, New York

Publishers of **House & Garden**

JUST PUBLISHED JUST PUBLISHED

CRAFTSMAN HOMES

By GUSTAV STICKLEY

A Book for Architects, Builders, Homemakers and Housekeepers

Containing practical house plans, exteriors and interiors, suggestions for gardens, gates and pergolas, models for furniture, metal work and needlework. The house plans comprise a choice collection of about fifty designs of country, suburban and town houses, bungalows, cottages and cabins, ranging in cost from $500 to $15,000. They have won high recognition as the first fearless expression of an independent national style of building, that meet the needs and characteristics of the American people.

CONTENTS: Craftsman houses and plans, halls and stairways, living-rooms, dining-rooms, porches and terraces, the effective use of cobblestones, gates and gateways, gardens, exterior features and materials, wall space and color schemes, interior woodwork and structural features, choice of woods, floors and how to finish them, treatment of interior woodwork, decoration and finishing, home cabinet-making, and metal work.

SIZES: 8½ x 11 inches. Fine India tint plate paper. Duotone sepia ink. Over 200 half-tone engravings of exteriors and interiors. Four full-page color plates and portrait sketch. Bound in full linen crash. Price, $2.00 net. Postage, $2.24.

MUNN & CO., Inc. 361 Broadway, New York

and both editor and publisher are to be heartily congratulated on the success obtained in this very valuable publication.

THE SCIENTIFIC AMERICAN BOY AT SCHOOL. By A. Russell Bond. New York: Munn & Co., Inc. Pp. 338. Price, $2.00.

One of the most interesting and helpful of recent books for boys was "The Scientific American Boy," by the accomplished author of the present volume, in which was described the adventures of a youth of mechanical turn of mind with his companions in a vacation season. Mr. Bond now carries the story further, places his hero in a boarding-school, and invites his readers to enjoy his later adventures and profit by them as well.

It is pre-eminently a boy's book for boys, for boys with sound bodies and healthy minds, who like to be out of doors and making things with their hands—just the kind of boys one reads about and would like to have or know, but which sometimes seem rather scarce when one scans the list of one's boy acquaintances. Mr. Bond has been more fortunate than some of us, for his boys are fine young chaps, full of life and vigor, and endowed with mechanical turns of mind that must have given some of their elders pause. But at all events they are not prigs, but good, wholesome boys of the right sort; and if one does not meet them in the streets every day, it is good to know there are such young people and to read about them in Mr. Bond's agreeable pages.

The book is not at all a history of school life, but might be scientifically described as an essay on surplus energy. It deals not with what the boys did in school hours, but what they did outside of them. These, of course, are the real hours of a boy's life, the time in which he is free and unrestrained, in which he seeks to please himself and work off some of that boy energy that is sometimes not always so appreciated by his elders as it might be.

So the book brims over with good nature and ingenuity and with the breath of outdoor activity. If the mechanical performances of these young fellows seem sometimes a bit audacious, we may rest assured with the author's certificate that they never did anything boys of real earnestness and ingenuity could not have accomplished. The careful parent may, perhaps, be disposed to pause a little at the flying machine, but—read Mr. Bond and find what happened.

The book is agreeably written with a fine sympathy for boy life and boy activity. It abounds in practical ideas and suggestions, and will prove a veritable boon to the parent who wishes to interest his boy in the value of thinking and doing. The numerous illustrations are extraordinarily helpful and practical.

CONCRETE POTTERY AND GARDEN FURNITURE. By Ralph C. Davidson. New York: Munn & Co., Inc. Pp. 196. Price, $1.50.

The publishers' statement that this is a new book on a new subject is very true. Neither concrete pottery nor concrete garden furniture is in itself new; but a book dealing with their making by the amateur has not heretofore been published, and hence this volume amply supports the claim of novelty made for it.

Readers of AMERICAN HOMES AND GARDENS have already acquired some familiarity with Mr. Davison's able guidance in this fascinating art, and while the articles he contributed to these pages have been reproduced in this book, they have been given a new form and much new and additional matter has been added to them. The illustrations have been greatly increased in number, and the whole given the form of a practical handbook.

Saves 1/3 The Cost of Your Car

Perfect lubrication—the kind you get from Vacuum MOBILOIL—will run your car a third longer and at a third less expense than if you merely trust to "lubrication," the common, careless, chance-taking kind.

Vacuum

MOBILOIL

is made in 6 different grades, one of which is made for your particular car. It saves you expense and experiment. It protects your car from friction, the hardest, costliest kind of motor wear.

A valuable booklet on motor lubrication will be sent free on application. Lists every automobile made, and shows grade of MOBILOIL necessary for its perfect lubrication. Contains track records up to date, and facts of vital interest to motorists.

MOBILOIL in barrels, and in cans with patent pouring spout, is sold by dealers everywhere. Manufactured by

VACUUM OIL CO., ROCHESTER, N. Y.

"YOU CHOOSE THE COLORS, WE'LL MAKE THE RUG"

The Thread & Thrum Workshop

Auburn, N. Y.

Originators of reversible end band rugs in interchangeable colorings.

Fabric and colorings original with us.

We copy none but employ the highest designing talent.

Dummy rugs designed and submitted to match interior decorations.

Any width, length or colors, plain, self tone or contrast.

Seamless up to twelve feet in width.

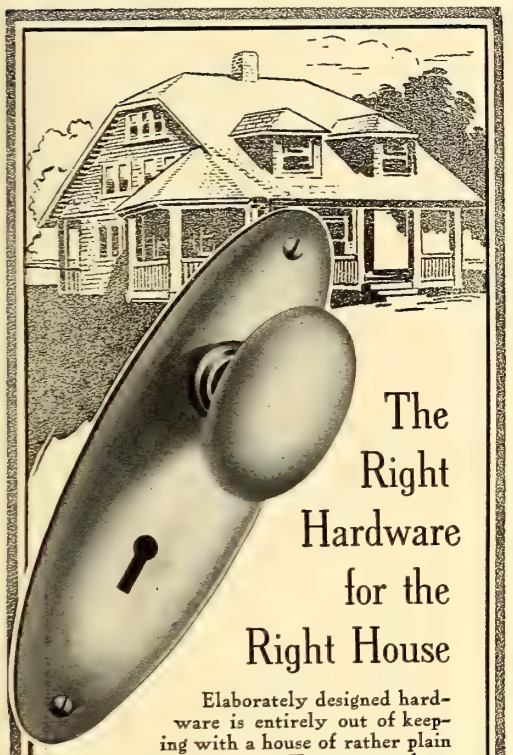
Quick deliveries on any size or colors, no tedious delays.

A high class fabric in any desired combination of colors in individual rugs for all.

Sold by best shops. If your dealer does not sell them, write for color card and price list to our selling agents

Arnold, Constable & Co.

Broadway and Nineteenth St. NEW YORK CITY



The Right Hardware for the Right House

Elaborately designed hardware is entirely out of keeping with a house of rather plain architecture. To secure harmonious results, consult your architect as to the *style* of hardware trimmings you should select, then from among the seventy and more patterns of

Sargent's Artistic Hardware

you can choose the particular design that appeals to your sense of the appropriate. Sargent's Hardware is famous for its beauty as well as for its durability and splendid workmanship. If you are building a new home, or remodeling the old one, you should write for

Sargent's Book of Designs —Sent Free

This book illustrates nearly fourscore of the most beautiful patterns ever designed for hardware trimmings. Every style and period of Architecture is represented by several designs.

Those interested in the Colonial should also request a free copy of *Sargent's Colonial Book.* Address

SARGENT & COMPANY
156 Leonard Street, New York

Stop heating nightmares

Your dreams about heating may be made blissful or dreadful—as you choose.

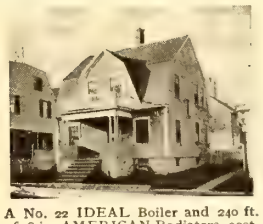
It is not the nightmare alone that comes from the work and worries of old-fashioned heating—you find your heating nightmares are realities in the morning. They are real nuisances which spoil your peace of mind by day and wreck your sleep by night. But there's a remedy.

AMERICAN RADIATORS & IDEAL BOILERS

afford the only means of heating which bring repose and health. These outfits for Hot-Water and Low-Pressure Steam heating produce nothing but cleanly, soft, even temperature—*suited to a baby or an athlete.* They should be installed in every home. They save their cost by cutting down the coal bills. They do away with ash-dust, soot, and hard work. Their cleanliness saves much wear on household furnishings. They are so built in small sections that they can be easily put in any house—old or new—farm or city.

Any person, no matter how inexperienced, may easily operate an IDEAL Boiler. It requires less care than a parlor stove.

A No. 3-22 IDEAL Boiler and 600 ft. of 38-in. AMERICAN Radiators, costing the owner **$255**, were used to Hot-Water this heat cottage.



A No. 22 IDEAL Boiler and 240 ft. of 38-in. AMERICAN Radiators, costing the owner **$115**, were used to Hot-Water heat this cottage.

At these prices the goods can be bought of any reputable, competent fitter. This did not include cost of labor, pipe, valves, freight, etc., which installation is extra and varies according to climatic and other conditions.

Our book, "Best Ways to Run the Boiler," furnished with each shipment, tells just how to get the best results in mild, cold, or severe weather, and from any kind of fuel. It presents a few simple rules, readily understood, and if followed gives absolute control of the fire, and makes every ounce of fuel yield its *full* heat.

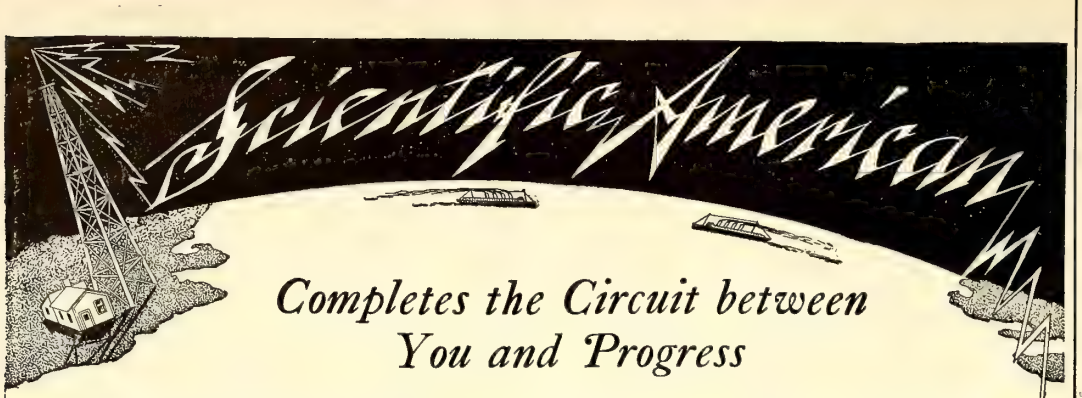
Our interest in the heating outfit does not cease with its sale, and should any feature in the care or operation of the Boiler not be understood, we most cordially invite correspondence.

Write us to-day for our new and valuable catalog—sent free.

Branches in all large cities

AMERICAN RADIATOR COMPANY

Write to Dept. 6 CHICAGO



Completes the Circuit between You and Progress

¶ CLEAN, WHOLESOME, INSTRUCTIVE AND ENTERTAINING, THE

Scientific American

is unique in the current literature of the world and ranks among the *great periodicals* which are regarded as *distinctly American Institutions.*

Its accurate, popularly written articles open to the intelligent mind the mysteries of science, mirror the inventive genius of the American Workman, show how dreams have become realities and that however well things have been done heretofore, better means of accomplishing the same results are constantly being devised. In a word, the "SCIENTIFIC AMERICAN" is a source of inspiration and entertainment to every intelligent reader.

DURING THE YEAR 1910

there will be found in the weekly issues of the "SCIENTIFIC AMERICAN" illustrated articles on the leading events of the day in regard to Aeronautics, Automobiles, the Navy, Engineering Works, Scientific News, etc. Our brief notes on Electricity, Engineering and Science are published in each issue. Our Correspondence Column contains letters from all parts of the world. In our Notes and Queries Department are published replies to correspondents in regard to the widest range of topics, and an able corps of experts is engaged to attend to these queries. A complete list of all patents issued in the United States appears in each issue. A department entitled the "Handy Man's Workshop" is published every second or third week. We have special correspondents in the various capitals of Europe.

The "SCIENTIFIC AMERICAN" is, in fact, a **Newspaper of Progress,** and as such no intelligent family can afford to be without it. **Subscription price, $3.00 per year.**

Read the "SCIENTIFIC AMERICAN" for Two Months Free

With a view of extending our subscription list we are prepared for a limited period to make you the following:

SPECIAL OFFER

If you will fill out the attached coupon and mail it to us with a remittance of $3.00 in payment for a New subscription for "SCIENTIFIC AMERICAN" we will enter the subscription for one year commencing January 1, 1910, and we will also send you *absolutely free* the numbers for November and December, 1909.

You will thus receive the "SCIENTIFIC AMERICAN" FOR FOURTEEN MONTHS for the price of one year's subscription. To those who act quickly we will also send in addition to the above a copy of our Special "Hudson-Fulton" Souvenir number. This magnificent number has thirty-two pages brimful of timely information and illustrations regarding the great explorer and the famous engineer, giving a history of the evolution of the River Steamboat in the United States and other topics of interest.

As the number of copies of this "Grand Souvenir" available for this purpose is very limited it will be necessary for you to send in your order at once in order to secure a copy.

MUNN & CO., Inc.

365 BROADWAY NEW YORK, N. Y.

TEAR OFF HERE

COUPON

MUNN & CO., Inc.

Enclosed please find $3.00 for which send me "Scientific American" for one year from Jan. 1, 1910, with Nov. and Dec., 1909, numbers and a copy of Special "Hudson-Fulton" Souvenir number free as per special offer.

Name .....

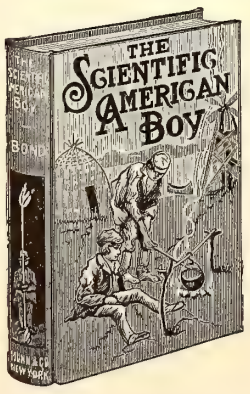
P. O. .....

State .....

The Scientific American Boy

By A. RUSSELL BOND

12mo. 320 Pages. 340 Illustrations. Price, $2.00. Postpaid.



¶ This is a story of outdoor boy life, suggesting a large number of diversions which, aside from affording entertainment, will stimulate in boys the creative spirit. In each instance complete practical instructions are given for building the various articles. ¶ The needs of the boy camper are supplied by the directions for making tramping outfits, sleeping bags and tents; also such other shelters as tree houses, straw huts, log cabins and caves. ¶ The winter diversions include instructions for making six kinds of skate sails and eight kinds of snowshoes and skis, besides ice boats, scooters, sledges, toboggans and a peculiar Swedish contrivance called a "rennwolf." ¶ Among the more instructive subjects covered are surveying, wigwagging, heliographing and bridge-building, in which six different kinds of bridges, including a simple cantilever bridge, are described.

FOR SALE AT ALL BOOKSTORES

Books on handicraft of any kind are apt to fail, more or less, in the inadequacy of their directions. The author too often knows so well what to do and how to do it as not to realize that those who have not followed the work before may not quite follow what are supposed to be careful directions. Mr. Davison has been fully alive to this misfortune in books of this kind, and has, therefore, taken especial pains to make his descriptions most accurate and detailed. No other method is, of course, really feasible, but it is seldom this sort of thing has been so well done as in his pages. The careful text is supplemented with illustrations as carefully made and lettered, so that the book is a genuine handbook of craft work, thoroughly practical in every part, and admirably adapted to its special purpose of explaining every portion of the work involved in the production of the various articles described.

Mr. Davison has opened up quite a new field for the amateur. The materials required are abundant and cheap; the methods, in the simpler pieces, at least, easy and devoid of difficulties. And the work is not only pleasant, but the results are agreeable and decorative. The author thoroughly knows and understands his subject, and has the gift of imparting his knowledge to his readers.

A GUIDE TO THE COUNTRY HOME. By Edward Kneeland Parkinson. New York: The Outing Publishing Co. Pp. 156. Price, $1.00 net.

This useful little book brings within small compass a host of helpful ideas and suggestions. It occupies a place of its own among the multitude of contemporary books on its subjects in being intended chiefly for the owner of a small farm. It appeals, therefore, not so much to the suburban house-owner as to the small farmer, with special reference to the amateur too, going out into the country, sseeks to grow up with it and make it grow at the same time.

The author takes up the whole subject of farm life in detail, after some helpful introductory chapters, and manages to condense an enormous amount of helpful knowledge into his pages. The information given is both concise and practical, and many will be helped and aided by a careful study of this volume. The matter is presented in an attractive way, and the publishers have given it a pleasant dress.

MODERN HOMES. Selected Examples of Dwelling Houses, Described and Illustrated by T. Raffles Davison. 8vo. Pp. 248. London, 1909: Gorge Bell & Sons. New York: The Macmillan Company. Price, $5.25 net.

No one can have seen more modern homes than Mr. Davison, and no one certainly knows better than he how to choose and present them to us. His architectural knowledget insures than the architecture is represented in such a manner as to satisfy the architect, while the artist in him insures that this shall not be emphasized at the expense of the general effect of his drawings. Here we have selected, by one who knows, some of the best and most representative modern homes. Views of exteriors and interiors, staircases, chimney-corners, halls and furniture are given, often accompanied by plans just sufficient to place them in their surroundings, and very often a sketch or two in the garden and sometimes a photograph. Drawings are accompanied by just enough letterpress to draw attention to the strong points of each design with entire absence of any wearisome technical detail which would be out of place in such a book. The book is beautifully illustrated and one which we can commend to all architects.

Index to
AMERICAN HOMES AND GARDENS

Volume VI.—January to December, 1909

Anesthetics, use of, for plants 64
Animals, in captivity, wild 13
"Annesden," summer home of Miss A. E. Quimby 307
Ants and bees as pets 206
Architecture, what really is Colonial 19
Armor, the Dino collection of historic 59
Artistic expression of the small country house 125
Artists, homes of American, C. H. Stephens .. 95
Artists, homes of American, D. C. French .. 5
Artists, homes of American, J. M. Carrère. 257
Artists, homes of American, T. S. Clarke .. 177
Art Nouveau, in Austria, l' 350
Arts and crafts, the, Byrdcliffe colony of 389

Bamboo in the Occident 35
Barn, a successful remodeled 228
Beauty and economy of stucco 438
Beauty, flower-box 188
Bedroom window curtaining 436
Begonia, the 226
Berolzheimer, E., Tarrytown, N. Y 85
Biltmore, forest conservation at 274
Birds and the country home *353
Birds, photographing 356
Bond, F. E., Penllyn, Pa 377
Bottles, a curious collection of 11
"Braemar," Mrs. M. R. Miller 217
Breeding, plant *58
Brick, a small, house at Concord, Mass 186
Brown, C. S., country seat of 74
Bungalow, and its furnishing, the details of 477
Bungalow, San Antonio 38
Bungalows, at Pasadena, Cal., a group of .. 354
Bungalows, four California 446
Bungalow type of the two-story house 405
Byrdcliffe colony of arts and crafts 389

Carrère, J. M., White Plains, N. Y 257
Carrots as a house decoration 411
Children, playhouses for 310
"Chesterwood," D. C. French 5
Clark, A., Newton, Mass 27
Clarke, T. S., Lenox, Mass 177
Clocks, floral 406
Cobwebs 409
Colonial architecture, what really is 19
Colonial house at Portsmouth, N. Y 235
Colonial residence of J. R. Williams 117
Colonial suburban home 362
Colored windows in the house *30
Comment, monthly, *4, *44, *84, *124, *216, *256 *296, *336, *376, *416
Competition, Rochester cheap cottage 327
Compost heap, the *106
Concrete in the building of the small country house 157
Concrete ornaments for the gardens, how to make, I-II-III-IV 359, 383, 426, 471
Conrow, T., Water Mill, Long Island 16
Cottage, competition, Rochester cheap 327
Country home, birds and the *353
Country house, concrete in building of small . 157
Country house, the modern 395
Creating a small country home 194
Crocker, G. Ramsey, N. J 297
Curtaining, bedroom window 436
Curtains for the summer home 267

Dairy, a French model 114
"Darlington," G. Crocker 297
Decoration, carrots as a house 411
Decorative features in the small home 142
Designs direct from Nature 304
Dining-room, its usage 31
Dino collection of historic armor, the 59
"Druidream," C. W. L. Roche 233
Dwelling, at Stokes Pogis, Pa., a reclaimed .. 264

Economizing garden space 37
Evolution of the small house plan 150

Farming experiment by women 443
"Fernbrook," T. S. Clarke 177
Fireplaces and fire-irons 488
"Firenze Cottage," D. Guggenheim 337
"Fleetwood," R. V. V. Sewell 482
Floral clocks 406
Flower-box beauty 188
Forest conservation at Biltmore 274
French, D. C., Glendale, Mass 5
Frick, C. E., "Triple Gable" house 113
Fruits, a few neglected *65
Furnishing the nursery 400
Furniture for the small home 154

Gambrel roof houses, three types of 53
Garages for small country places 146
Garden, a naturalistic, "Glenbrook" 283
Garden and pergola, designed by an amateur 152
Garden at Hamilton House 422
Garden, a wood 70
Garden, concrete ornaments for, how to make, I-II-III-IV 359, 383, 426, 471
Garden, first prize, the 457
Garden gate, the 271
Garden in your town, the *176
Garden notes *212
Garden space, economizing 37
Gardens, wall 242
Garden, the making of an iris 140
Garden-work about the home *40, *80
Gate, the garden 271
"Gellian Court," E. Berolzheimer 85
Giant leaves 103
"Glenbrook," a naturalistic garden 283
Grape culture in France 317
Grounds, and the roadway, the 99
Guggenheim, D., Elberon, N. J 337

Hall, A. W., Crystal Brook, L. I 239
Hammering and piercing metal, the craft of 463
Hamilton House, garden at 422
Hammond, J. H., Wynnewood, Pa 429
Hand-loom, what can be done in a 220
Healthiest house in the world, the 269
Heap, the compost *106
Historic mansions of the Rappahannock River 197
Home, Colonial suburban 362
Home, creating a small country 194
Home, curtains for the summer 267
Home, decorative features in the small 142
Home-furnishing, problems in 40, 80
Home, furniture for the small 154
Home, garden-work about the *40, *80
Home-made novelties for the country home .. 148
Home-making, vacation 347
Home of A. W. Hall 239
Homes of American artists, C. H. Stephens .. 95
Homes of American artists, D. C. French ... 5
Homes of American artists, J. M. Carrère .. 257
Homes of American artists, T. S. Clarke ... 177
Homes, some Western 465
Homestead, a seventeenth century 66
"Homewood," R. G. Tower 248
House, at Concord, a small brick 186
House built for J. L. Johnson, at Hackensack 204
House, Colonial, at Portsmouth, N. H 235
House for a guaranteed cost 232
Housekeeping, a new method of *77
House of J. E. Wheeler, New Haven, Conn .. 330
House of J. H. Hammond, Wynnewood, Pa. 429
House, plumbing for a small country 136
Houses, a group of inexpensive, Forest Hills, L. I. 244
Houses, a group of small, inexpensive 313
Houses, gambrel-roof, three types of 53
Houses, group of modern, at Nutley, N. J ... 431
Houses, model motor, for the small country place 146
Houses, sixteen, at a moderate cost 230
Houses, small, at a small cost 278
House, the healthiest in the world 269
House, the profitable 290
House with a guaranteed cost, a 321

Inn, the Wayside 322
Iris garden, the making of an 140

Johnson, J. L., house at Hackensack, N. J ... 204

Leaves, giant 103
Lee, G., Beverly Farms, Mass 417
"Lindens, The," E. S. Williams 286
Loom, what can be done in hand 220

Mamillana rhodantha, a specimen of 30
Mansions of the Rappahannock River, historic 197
Metal, the craft of hammering and piercing 463
Method of housekeeping, a new *77
Miller, Mrs. M. R., Tarrytown-on-Hudson .. 217
Mimicry of plants, the 25
Modern country house, the 395
Monthly comment, *4, *44, *84, *124, *216, *256 *296, *336, *376, *416, *456
Motor houses for the small country place, model 146
Mushrooms, the wild 261

Nature, designs direct from 304
Nature's traps *73
Notable American homes, C. P. Searle 45
Notable American homes, D. Guggenheim .. 337
Notable American homes, E. Berolzheimer .. 85
Notable American homes, F. E. Bond 377
Notable American homes, G. Crocker 297
Notable American homes, G. Lee 417
Notable American homes, Mrs. M. R. Miller. 217
Notes, garden *212
Novelties for the country home, home-made. 148
Nursery, furnishing the 400

Paris, new seed-testing station in 78
"Penllyn House," A. K. Wood 209
Pergola and formal garden designed by an amateur 152
Pets, ants and bees as 206
Photographing birds 356
Photographs of sixteen houses of moderate cost 230
"Pine Haven," T. B. Van Buren 451
Plan, evolution of the small house 150
Plant breeding *58
Plants, do they think 369
Plants, the mimicry of 25
Plants, use of anesthetics for 64
Playhouses for children 310
Plumbing for a small country house 136
Pony, the American Shetland 450
Porch sitting-room 191
Pool, swimming, for private gardens 341
Practical suggestions for domestic ventilation . 183
Problems in home-furnishing 40, 80
Profitable house, the 290

Quimby, Miss A. E., Bridgehampton, L. I .. 307

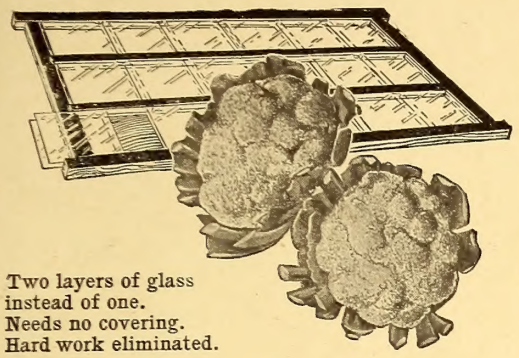
Reclaimed dwelling at Stokes Pogis, Pa 264
"Red Oaks," J. M. Carrère 257
Reid, Prof. L. W., Merion, Pa 112
Remodeled barn, a successful 228
Revival of an old handicraft, hand-made rugs 50
Roadway and the grounds 99
Roche, C. W. L., Short Hills, N. J 223
Rochester cheap cottage competition 327
"Rock Ridge," F. A. Russ 107
Rodantha mamillania, a specimen of 30
Roses for winter 93
Rugs, revival of an old handicraft, hand-made 50
Russ, F. A., Greenwich, Conn 107

"Sabine Hall," historic mansion in Virginia. 197
San Antonio bungalow 38
Searle, C. P., Ipswich, Mass 45
Seed-testing, new station in Paris 78
Seventeenth century homestead, a 66
Sewell, R. V. V., Oyster Bay, L. I 482
Sitting-room porch 191
Sixteen houses at a moderate cost 230
Small country house, artistic expression of the 125
Smith, G. E., Philips Beach, Mass 364
Soil, Making *481
Stenciling, new, developments in 110
Stephens, C. H., Rose Valley, Pa 95
Strong, W. C., Waban, Mass 386
Stucco, beauty and economy of 438
Swimming-pool for private gardens 341

Tower, R. G., Lexington, Mass 248
Trees, trimming old *270
Trellises 343
Trimming old trees *270
"Triple-gable" house, C. E. Frick 113
Two-story house of the bungalow type 405

Vacation home-making 347
Van Buren, T. B., Kennebunkport, Maine ... 451
Ventilation, practical suggestions for domestic 183
"Ville al Mare," G. Lee 417

Wall gardens 242
Watercress culture in France 201
"Wayside Inn," the 322
"Weldacre," G. E. Smith 364
Wheeler, J. E., New Haven, Conn 330
Wild mushrooms, the 261
Williams, E. S., Nahant, Mass 286
Williams, J. R., Haverford, Pa 117
"Willow Brook House," F. E. Bond 377
Windows, in the house, colored *30
Winter, roses for 93
Women, a farming experiment by 443
Wood, A. K., Ardsley-on-Hudson, N. Y 209
Wood garden, a 70



Two layers of glass
instead of one.
Needs no covering.
Hard work eliminated.

Winter Gardening for profit and pleasure

Get some **Sunlight Double Glass Sash.** You will have lettuce, cauliflower, radishes and the like for your table; and for field work you will have the earliest vegetables and flower plants.

The Sunlight Sash has two layers of glass with a cushion of dry air between, which protects the plants even in zero weather.

Mats and boards no longer needed with Sunlight Sash; it does away with all the drudgery.

Write to-day for catalog and information. Fast freight, safe delivery guaranteed.

SUNLIGHT Double Glass Sash TRADE MARK
for Hot-beds and Cold-frames

SUNLIGHT DOUBLE GLASS SASH CO.
943 E. Broadway, Louisville, Ky.

RATS KILLED BY SCIENCE

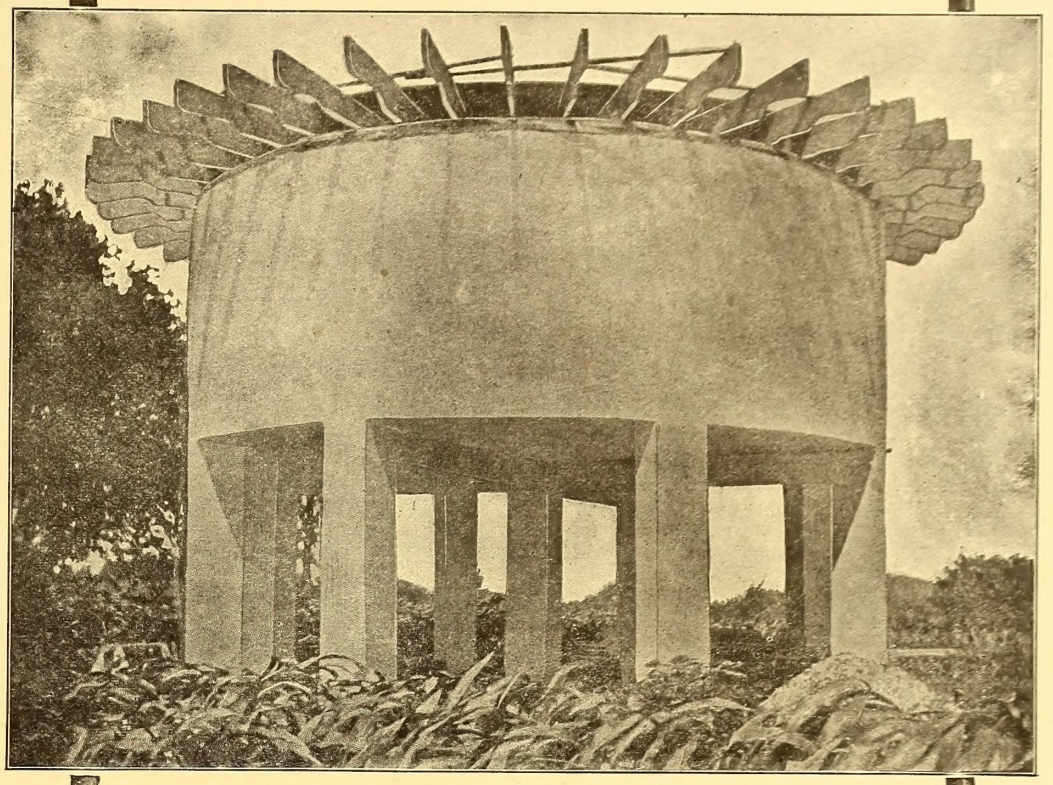
Send for booklet on the wonderful bacteriological preparation which exterminates rats and mice and yet is harmless to other animals, birds and human beings.

DANYSZ VIRUS

INDEPENDENT CHEMICAL COMPANY, Dept. Z, 25 OLD SLIP, NEW YORK CITY

FLOORS

ROOFS



A concrete tank erected on estate of Edmund Tatham, Katonah, New York

Frederick J. Sterner, Architect - - New York
De Lancey A. Cameron, Builder - - New York

Tank designed for storage supply of 15,000 gallons, built entirely of concrete reinforced with Clinton welded wire. Before roof was placed over tank, and during winter months, ice 10 inches thick formed on water stored therein. No cracks or leakage have developed.

Clinton Wire Cloth Company
CLINTON, MASS.

Ceilings

Partitions

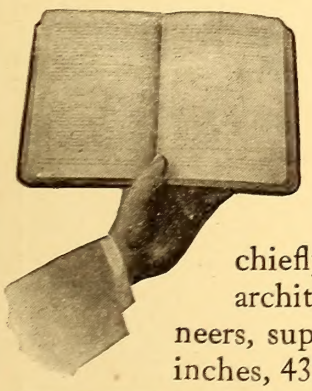
Fireproofing Departments:
ALBERT OLIVER, 1 MADISON AVE., NEW YORK

WASHINGTON: Rosslyn Supply Co., Colorado Building
CHICAGO: Clinton Wire Cloth Co., 30-32 River Street
BUFFALO, N. Y.: Buffalo Wire Works Co., Inc.
CLEVELAND, OHIO: Carl Horix, 428 Garfield Building
ST. LOUIS: Hunkins-Willis Lime & Cement Co.
SAN FRANCISCO: L. A. Norris, 835 Monadnock Bldg
SEATTLE: L. A. Norris, 909 Alaska Building
SYRACUSE, N. Y.: National Construction Company

JUST PUBLISHED

The New Building Estimator

BY WILLIAM ARTHUR

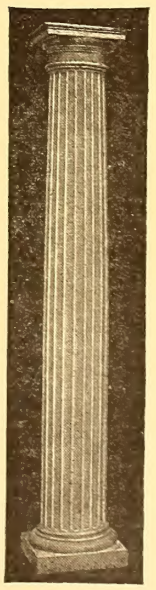


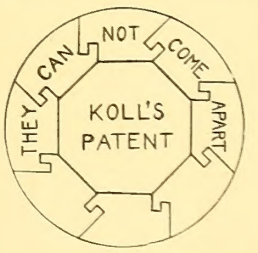
A PRACTICAL guide to estimating the cost of labor and material in building construction from excavation to finish, with various practical examples of work presented in detail, and with labor figured chiefly in hours and quantities. A hand-book for architects, builders, contractors, appraisers, engineers, superintendents and draftsmen. Size, 4¾x6¾ inches, 437 pages, cloth bound. Price, $2.50 postpaid

AN INDISPENSABLE AID TO CONTRACTORS

A circular describing this book will be mailed on application
MUNN & CO., Inc. 361 BROADWAY, NEW YORK

Koll's Patent Lock-Joint Columns





The Best for Pergolas, Porches or Interior Use are made exclusively by

Hartmann - Sanders Company

Elston and Webster Avenues
CHICAGO, ILL.

Eastern Office, 1123 Broadway
NEW YORK

Send for Catalogue A-19 of Columns, or A-29 of Sun-dials, Pedestals, etc. (See also "Sweet's Index.")

COLUMBIA

CONSTANTINO
The Great Spanish Tenor
Sings exclusively for the Columbia

10-inch Double-Disc Records	$1.50
12-inch Double-Disc Records	$2.50

THE COLUMBIA
GRAFONOLA
DE LUXE - $ 200.00
(WITH REGINA ATTACHMENT $225.00)

GRAFONOLA

THE ONE INCOMPARABLE MUSICAL INSTRUMENT

The Grafonola marks an epoch in the evolution of the perfect musical instrument.

By its use of Double-Disc talking-machine records, it is in reality a Graphophone—but a Graphophone of marvelous richness of tone, and entirely self-contained—without the horn of any other recognizable talking-machine feature. Its construction embodies entirely unique principles of sound-reproduction and of tone-projection.

The added $25, in the $225 instrument, secures you a Regina equipment, including twelve Regina tune discs, that in a smaller casing is being placed in thousands of drawing-rooms at $100. The Regina Music-Box has its hosts of friends among lovers of music. Its combination with the Grafonola brings to the home everything that can be sung or spoken or played.

There are "concealed-horn" talking-machines on the market already. If you will make just one comparison you will own a Grafonola. You can make this comparison by stepping into any store where Columbia records are carried in stock—or you can do it fairly well by mail. We have an advance sheet ready for you. Ask for the *Grafonola* catalog.

Double-Disc Records—65c.

Played on your own machine, no matter whether it's a Columbia or not, Columbia Double-Disc Records will give you better music and longer service. Get *Columbia* Double-Discs. Don't take "no" for an answer. We can give you the address of a nearby dealer; or send us 65 cents and we will send you a sample record, postage free, with a catalog.

COLUMBIA PHONOGRAPH COMPANY, GEN'L,
Dept. K K12, Tribune Building, New York

Manufacturers of Disc and Cylinder Graphophones—$20 to $200—Double-Disc and Indestructible Cylinder Records. Dealers in all principal cities.
Headquarters for Canada—264 Yonge Street, Toronto, Ont.

DEALERS WANTED
Exclusive selling rights given where we are not properly represented